iSite Radiology 3.5

User Manual

iSite 3.5 Release (iSR: June 30, 2006)*

* This document was published on the date given above, at which point the online documentation was complete and cleared for release. Please note that subsequent changes to the online User Manual may not be reflected in this Printable version.

Table of Contents

Trademarks and Copyrights……	4
Regulatory Information……	5
iSite Radiology Proper Usage Statement ……	6
Placement Guide……	8
New Features in iSite Radiology 3.5 ……	10
Logging in to iSite Radiology……	12
Mouse Control Reference Sheet ……	16
iSite Radiology Features Reference Sheet ……	21
iSite Shortcuts Bar ……..	24
Using the iSite Folder List …….	34
CD Manager Tool ……	40
Local Exam Cache ……	47
Personalizing iSite Radiology ……	50
iSite Radiology Worklists……	133
iSite Radiology Canvas Page……..	152
Reading from the Diagnostic Monitors…….	206
Viewing Diagnostic Reports…….	266
iQuery: DICOM Study Retrieval System……..	269
	277

iExport: DICOM Export Tool……..	**282**
	289
	290
FAQs & How-To's ……..……	
Troubleshooting ……..	
Glossary of Terms ……..……	

Trademarks and Copyrights

Copyright & Disclaimer Information

© 2000 Koninklijke Philips Electronics N.V. All rights reserved. iSite, iSite Enterprise, iSite Radiology, iVault, iExport, iQuery and iSyntax are trademarks of Philips.

While Philips provides the information in this manual to users of the iSite product, we retain copyright on all text and graphic images. This means that you may not: distribute the text or graphics to others without the express written permission of Philips; "mirror" or include this information on your own server or documents without our permission; modify or re-use the text or graphics. You MAY: print copies of the information for your own personal use; store the files on your own computer for your personal use only.

The information contained herein is designed to be as comprehensive and factual as possible. Philips reserves the right, however, to make changes at any time, without notice, in products, performance specifications and availability.

Other manufacturers' product and service names profiled herein are trademarks and service marks of their respective companies.

Philips reserves all other rights.

Please direct all questions about this manual or the trademarks and copyrights contained herein to: isitecare@philips.com

Regulatory Information

Company Contact :

Stentor, Inc., a Philips Medical Systems Company
Global PACS Business Unit
5000 Marina Blvd, Suite 100
Brisbane, CA 94005
USA

Authorized European Representative:

Philips Medical Systems Nederland B.V.
PMS Quality & Regulatory Affairs Europe
Veenpluis 4-6
5684 PC Best
The Netherlands

Product and Classification:

- iSite Radiology, Class II (CFR)
- iSite Radiology, Class I (MDD, Annex IX)

Statement of Compliance with the following:

- Code of Federal Regulations (CFR) Title 21, Parts 800 – 1299, as applicable
- Food Drug and Cosmetic Act
- The Sherman Act
- ISO 13485:03
- CAN/CSA-ISO 13485:03
- Medical Devices Regulations
- MDD 93/42/EEC

iSite Radiology Proper Usage Statement

Who Should Read This Manual

This manual is intended for clinical users of the Philips iSite Radiology product. Anybody in a healthcare organization who intends to use this product should read this manual carefully. We also recommend that you receive basic product-use training from your local systems administrator or from a Philips Global PACS applications specialist.

When to Use iSite Radiology

CAUTION

This product should be used by a licensed radiologist or by a non-radiologist (technologist or intern) in conjunction with a licensed radiologist.

This product is intended to be used as a tool to assist in rendering clinical diagnosis. Improper use or configuration of this product may preclude an accurate clinical diagnosis, adversely impacting patient diagnosis or patient care. All instructions found in the iSite Radiology Placement Guide must be followed in order to achieve the proper configuration and correct use of this product.

Lossy compressed mammographic images and digitized film screen images must not be reviewed for primary image interpretations. Mammographic images may only be interpreted using an FDA approved monitor that offers at least 5 megapixel resolution and meets other technical specifications reviewed and accepted by FDA.

Safe Usage Environment

Customer equipment for operating the iSite Radiology service must be approved by Philips and must be maintained in accordance with the manufacturer's specifications. In addition, the iSite Radiology software must be installed on computers in accordance with the guidelines of the Radiology Placement Guide.

Prior to using this product, your computer system must be set up in the proper environment for viewing images.

- Be sure that your computer monitors have been properly configured prior to using iSite Radiology. To configure your monitors, carefully follow the monitor manufacturer's specifications and/or instructions for monitor calibration. If the monitors used in conjunction with iSite Radiology (navigation console and diagnostic monitors) are not properly calibrated, iSite Radiology has not been properly configured and should not be used.

- iSite Radiology should be validated in the absence of any diagnostic monitors (ie. when only the ROP is available).

When Not to Use iSite

Do not use this product if:

- You know that the computer system you are using is clearly malfunctioning.

- Your system administrator tells you not to.

- There is an error or warning message being displayed on the computer system.

- You are in a surgical room or other environment where chemically volatile compounds are in use (this product is not intended for use in such environments).

- You are aware of any system problems or malfunctions. Always notify your system administrator of any potential system problems or availability issues as soon as possible.

CAUTION

Never render a primary diagnosis on images if you are using a monitor that was not certified or calibrated for primary diagnosis purposes.

iSite Radiology Placement Guide

The goal of this placement guide is to ensure an optimal environment for the placement and operation of the iSite system. There is a great deal of diversity in the IT and clinical environments in which the iSite System will be placed, the items below are meant to serve as general, broad guidelines and should not take the place of a specialized consultation with Philips personnel and/or an ergonomics specialist.

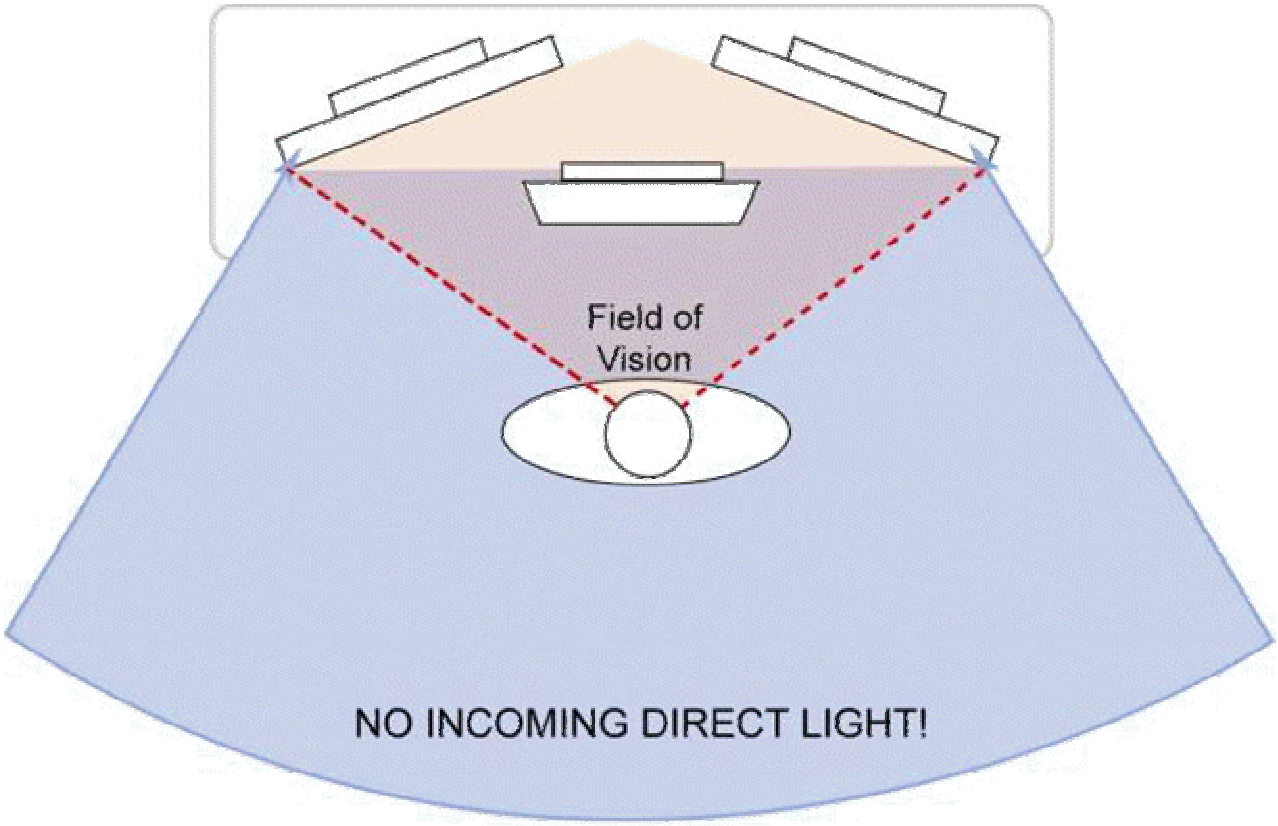
- iSite Radiology should be installed in a dimly lit space, consistent with current clinical reading environments.
- iSite Radiology monitors should not be exposed to direct light of any kind, in order to avoid glare. Particular attention should be given to ensuring that the iSite Radiology monitors are not situated in an area where they would be exposed to light from existing light boxes or other light emitting devices.
- iSite Radiology monitors should be calibrated while in the ambient light conditions where the product will be used. Calibration should be performed following the original manufacturer's guidelines.
- iSite Radiology monitors should be installed such that they are not affected by light from another iSite Radiology system or other (softcopy) workstations. Conversely, iSite Radiology monitors should be set up such that they do not affect another iSite Radiology system or another diagnostic reading station.
- Appropriate, specialized furniture is recommended for iSite Radiology to ensure optimal performance, ergonomics and safety.
- In case of iSite System unavailability, the institution should provide for an alternative methodology to provide images of sufficient image quality to the physicians.
- To facilitate proper system operation, all computer equipment should be installed in an environment that meets the original manufacturers guidelines.

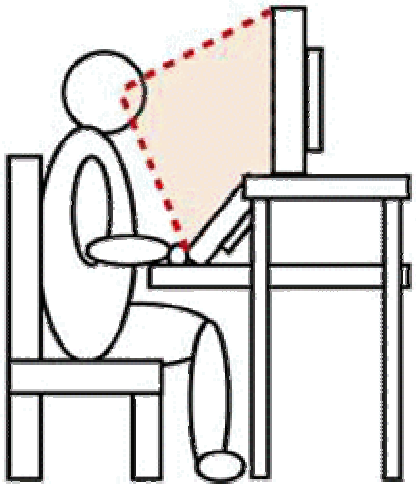
Failure to follow these guidelines could adversely affect the diagnostic integrity of the images being displayed on the iSite Radiology system or could adversely affect the institution's ability to provide imaging services.

If you have any questions about the guidelines listed above please refer to the iSite System Administrator’s Manual or contact Philips Customer Care, 24 hours a day, at (877) 328-2808.

iSite Radiology Placement Guidelines

The following diagram is designed to provide guidelines for the proper placement of iSite Radiology.





New Features

New Features in iSite Radiology 3.5

MPR (Multi-Planar Reconstruction)

iSite 3.5 now includes an MPR tool, allowing the user to reconstruct missing image series orientations using data from orientations that are available.

Remote Reading / Caching of Exams on Remote Client Machines

If the Remote Reading Mode checkbox is selected at login, iSite Radiology will engage the teleradiology Remote Reading Mode. This mode is designed for site with radiologists who read exams from off site. Remote Reading Mode allows a group of offsite radiologists to function as a virtual group within the reading environment. The behavior of Remote Reading Mode is dictated by your Reading Preferences. You can specify how exams are handled, auto-locking and maximum file size to be downloaded.

Fast Cine and Cine Loop Enhancements

In iSite 3.5, the Fast Cine and Cine Loop features have been enhanced in several ways to facilitate work with studies that have large numbers of slices. Fast Cine and Cine Loop can be more accurately controlled using the mouse and the user now has the freedom to set a preference for the default frames per second playback of cine loops. This default rate can now be raised as high as 45 frames per second. In addition, the user can adjust the playback rate on the fly with the " + " and " - " buttons.

DICOM Part 10 Export

The CD Manager tool in iSite 3.5 now allows the user to export exam images and information in DICOM Part 10, either alone or together with the standard Philips iSite syntax. The resulting export includes a "DICOM" folder which can be easily imported into other DICOM devices.

"DUP UID Cases" History Folder

iSite now shows a History Folder of Duplicate Unique ID cases that have been observed or resolved.

Pop-up Menu Font Control

The font size of iSite Radiology's pop-up menus can now be independently controlled via the Machine-specific Display Preferences. This solves a problem of small display sizes that was being experienced by users with very high resolution monitors.

DICOM Source Enhancements

DICOM Sources can now be configured using exam code criteria, allowing for greater granularity in organizing how exams are sorted in the exam racks. In addition, exam rack sorting via DICOM Sources can now be performed entirely with image-level tags if desired.

Matching Series Rules Import and Export

Matching Series Rules can now be imported to and exported from the iSite server. This facilitates improved configuration of an institution's radiology protocols by eliminating the need for extensive data entry, thereby shortening the time needed to bring iSite Radiology on line.

Support for Larger DICOM Study Sizes

As of iSite 3.5, the limit for acceptable uncompressed DICOM study sizes has been increased from 2GB to an unprecedented 25GB. While the most technologically innovative studies are currently at 3-4GB, iSite 3.5 removes all size-related barriers to supporting the most technologically advanced modalities.

Image Overlays

The maximum number of image overlays has been increased to 50. In addition, several new preset overlays have been added.

Low-memory Warning

iSite will now display a warning message to the user if low memory is detected on the client machine.

VOI LUT

iSite now supports VOI LUTs via the right-click pop-up menu. VOI LUTs can also be preserved using Presentation States.

New Image Arrival Notification

If new images for an exam arrive while you are working on that exam, iSite will notify you visually.

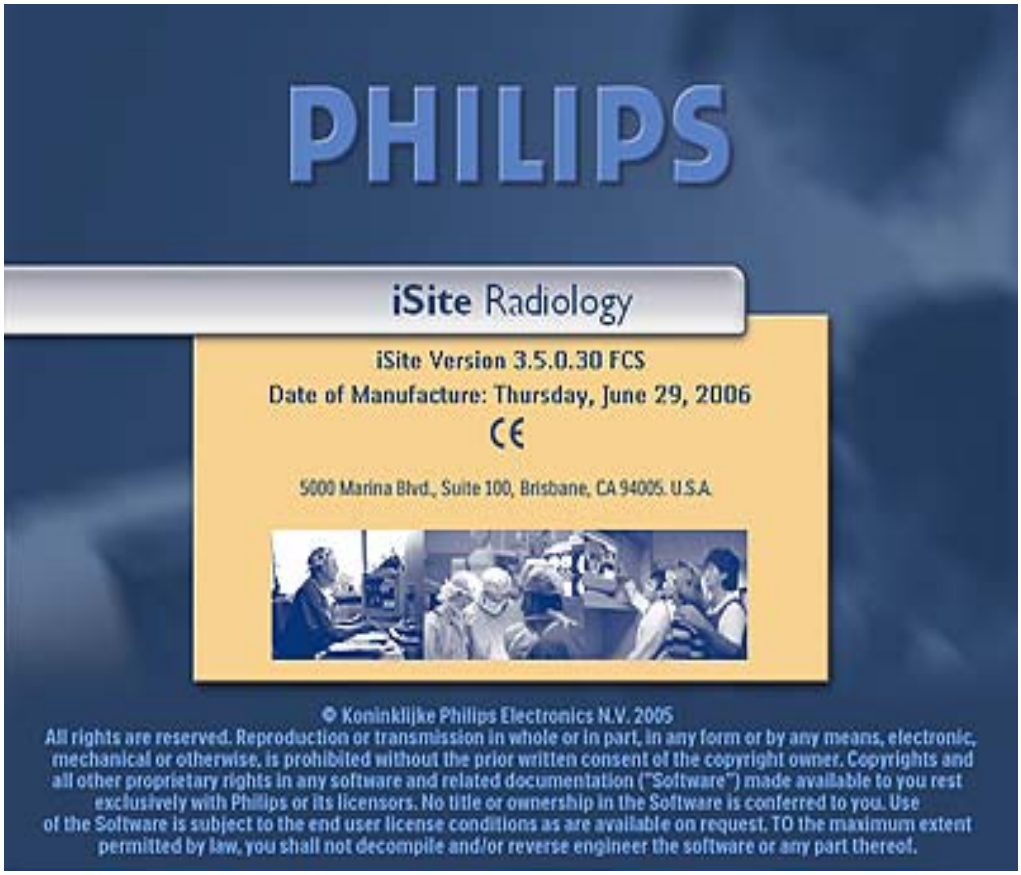
Image Processing Filters Updated

The Edge Enhance and Edge Detect processing filters have been updated so that they are applied to the entire series being viewed.

Logging in to iSite Radiology

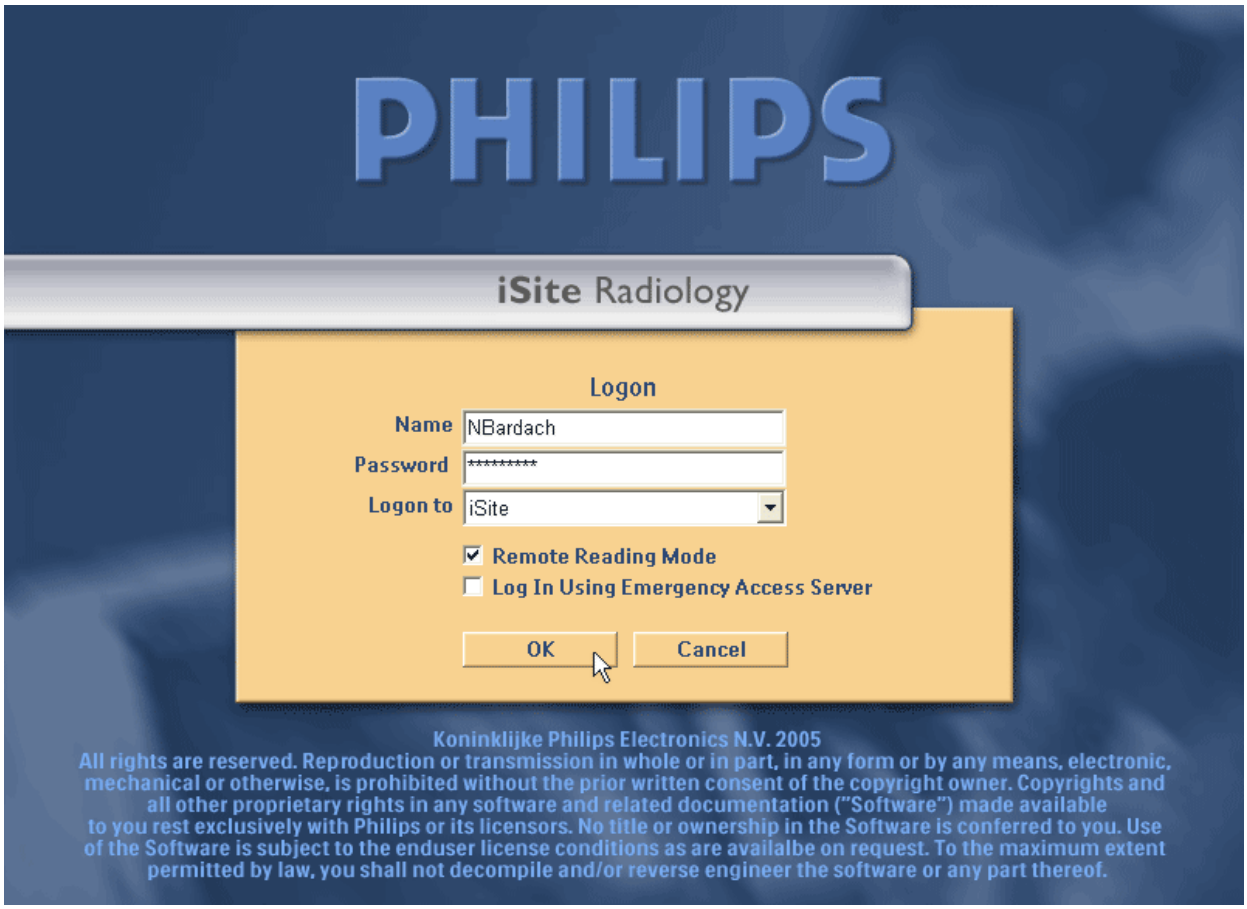
Once the iSite System Administrator at your institution has properly configured your workstation and given you an iSite login/password combination, you will find an iSite Radiology icon placed on your workstation's desktop. To begin working with iSite Radiology, double-click this icon.

During startup iSite Radiology will display a "splash" screen for a few seconds with information about the product. The same information can be found within the About Dialog.


PHILIPS
iSite Radiology
iSite Version 3.5.0.30 FCS
Date of Manufacture: Thursday, June 29, 2006
CE
5000 Marina Blvd., Suite 100, Brisbane, CA 94005. U.S.A.
© Koninklijke Philips Electronics N.V. 2005
All rights are reserved. Reproduction or transmission in whole or in part, in any form or by any means, electronic, mechanical or otherwise, is prohibited without the prior written consent of the copyright owner. Copyrights and all other proprietary rights in any software and related documentation ("Software") made available to you rest exclusively with Philips or its licensors. No title or ownership in the Software is conferred to you. Use of the Software is subject to the end user license conditions as are available on request. TO the maximum extent permitted by law, you shall not decompile and/or reverse engineer the software or any part thereof.

After the "splash" screen disappears, the iSite Radiology login screen will appear, as seen below. Please note that running other programs simultaneously with iSite Radiology is strongly discouraged. Also note that once iSite Radiology has initiated, it will occupy the entire screen of your workstation.

When you start iSite Radiology, the program will check your hardware to make sure that it meets the minimum hardware requirements. If you system does not meet this requirements, you will be notified by a dialog containing the detected specifications and the required specifications.


PHILIPS
iSite Radiology
Logon
Name
NBardach
Password
Logon to
iSite
Remote Reading Mode
Log In Using Emergency Access Server
OK
Cancel
Koninklijke Philips Electronics N.V. 2005
All rights are reserved. Reproduction or transmission in whole or in part, in any form or by any means, electronic, mechanical or otherwise, is prohibited without the prior written consent of the copyright owner. Copyrights and all other proprietary rights in any software and related documentation ("Software") made available to you rest exclusively with Philips or its licensors. No title or ownership in the Software is conferred to you. Use of the Software is subject to the enduser license conditions as are availalbe on request. To the maximum extent permitted by law, you shall not decompile and/or reverse engineer the software or any part thereof.

Enter the username and password provided to you by your institution's iSite System Administrator. Choose the proper authentication scheme, "iSite" or "Domain Authentication", then click the "Enter" key or click the "Log-In" button with your mouse. Your iSite System Administrator should tell you which authentication scheme to use.

To exit the iSite Radiology login screen, click the "Cancel" button.

If your username or password is invalid, iSite Radiology will display the following message: "Invalid user name or password". There are a number of possible reasons that your login/password combination could have gone unrecognized by the system. Contact your iSite System Administrator as soon as possible to have your login and password revised and/or reinstated.

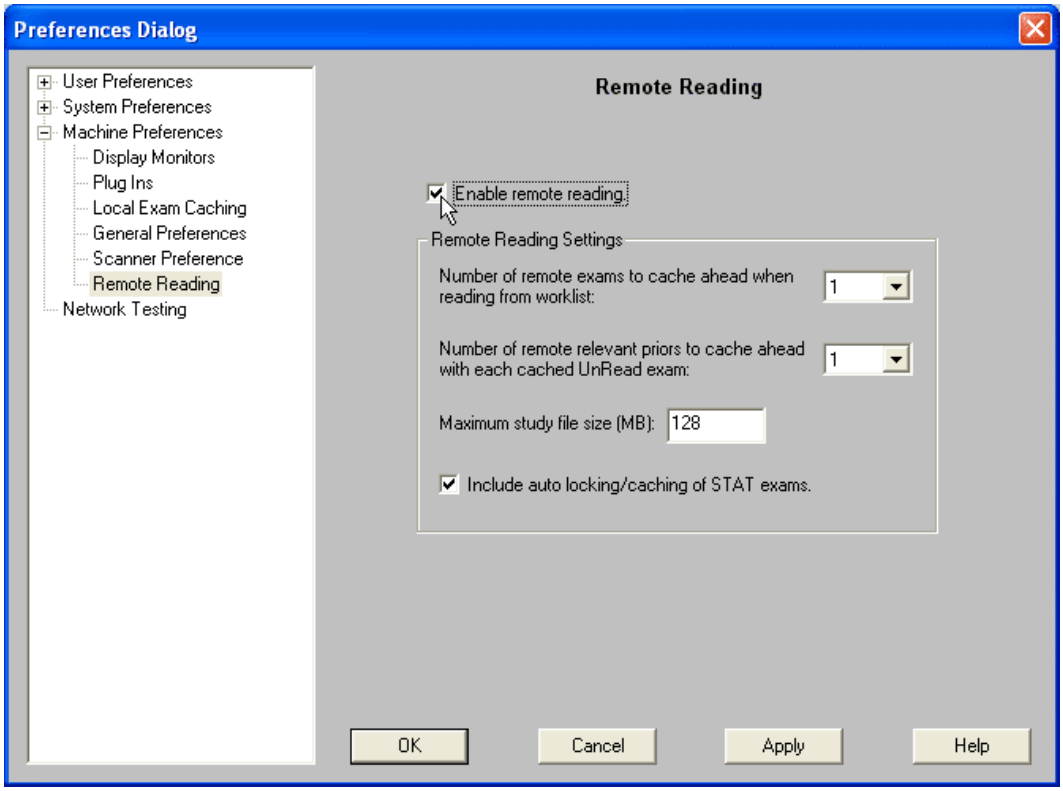
Remote Reading and Emergency Access

There may be times when your iSite Radiology workstation has lost communication with the iSite Server, but you still need access to the diagnostic images being sent out by the various modalities. For these situations, iSite Radiology provides Emergency Access. To engage the Emergency Access mode, you must click the "Log In Using Emergency Access Server" checkbox, as seen below:

While this will provide you with access to the image feed from the modalities at your institution, iSite Radiology's capabilities will be significantly limited. In Emergency Access mode, all exams are registered as exceptions. There will be no access to diagnostic reports, prior exams, hanging protocols or presentation states. You will, however, be able to view and measure images. For more questions about Emergency Access mode, please contact your iSite System Administrator.

Remote Reading Mode

When the user has the ISTLCACHE security code enabled and the "Enable remote reading" checkbox is checked in the Machine Preferences, seen below, a Remote Reading Mode checkbox will appear on the iSite Radiology Login Screen.



If the Remote Reading Mode checkbox is selected at login, iSite Radiology will engage the teleradiology Remote Reading Mode. This mode is designed for site with radiologists who read exams from off site. Remote Reading Mode allows a group of offsite radiologists to function as a virtual group within the reading environment. The behavior of Remote Reading Mode is dictated by your Reading Preferences. You can specify how exams are handled, auto-locking and maximum file size to be downloaded.

While In Remote Reading Mode, if the "Include auto locking/caching of STAT exams" box is checked, when you open a new exam that is not locked by another user, the exam will be locked and iSite Radiology will automatically cache the entire exam on your local machine. STAT exams will also be automatically cached for reading.

In addition, when in Remote Reading Mode, if the "look-ahead" setting is selected in the Remote Reading Preferences, iSite Radiology will deploy a "look-ahead" cache to the local machine, automatically caching the next unread exam from your worklist and loading that exam when the exam being viewed is marked "Read."

Monitor Calibration

The correct calibration of your Navigational Console (the small monitor that displays the iSite Radiology Worklists and Canvas Page) and your Diagnostic Monitors (where the diagnostic radiological images are displayed) is critical to the identification of patient pathology and subsequent patient care. iSite Radiology will not work properly if the monitors used in conjunction with it are not properly configured.

To configure your monitors, carefully follow the specifications and directions laid out by the manufacturers of your monitors.

Some links that might be helpful are listed below:

Barco Medical Equipment

- http://www.barcomedical.com/
- http://www.barcomedical.com/cs/manuals.htm/

Dome Imaging Systems

- http://www.dome.com/
- http://www.dome.com/support/prod_docs.html

If you have any questions regarding the calibration of your iSite Radiology Monitors, please contact Philips at (877) 328-2808 or write an email to isitecare@philips.com.

iSite Radiology
Mouse Control Reference Sheet
(for working with images)

Action	Left Button	Wheel	Right Button
Click	Select and deselect images and/or series. Also releases any other mouse modes currently in effect	N/A	Activates pop-up menu
Double-Click	Open image in a floating window In the Patient Query Page and MyWorklist, double-clicking an exam-listing will open that exam as well as any related exams, according to the hanging protocol for that exam's modality	In Canvas Page, if a multi-image stack series is double-clicked using the Mouse Wheel, Fast Cine is enabled at an initial frame rate of 1 FPS. Double-clicking again toggles Fast Cine on/off.	N/A
Click + Drag	**On the image:** Drag vertically: window level Drag horizontally: window width **On the image header and footer:** Used for moving images or series within an exam rack.	**Plain Films:** Pan	N/A
Alt key + Drag	Zoom (for expanded images and images in the diagnostic monitors only)	N/A	N/A
Control key + Drag	Pan in zoomed in view (for expanded images and images in the diagnostic monitors only)	N/A	N/A

Roll wheel forward or backward	N/A	**Plain Films:** Zoom into or out of the image at the cursor's location **Series:** frame-by-frame review through slices. In Cine Mode changes playback direction (Asc/Dec)	N/A
Shift-key	Allows selection of multiple images while linking or preparing to print.	N/A	N/A

Hold down the shift key while executing mouse or keyboard controls to temporarily disconnect an image from any links.

The following chart lists keyboard commands that are used independently of the mouse.

Keystroke	Action
Space bar	While cursor is over an image or series, toggles that image as a key image
Page Up and Page Down	Single-frame review for image series.
Right and Left Arrow Keys	Same function as F7 and F8 (listed directly above.)
Control key + P	Toogles the Diagnostic Monitor Pane Icons in the Navigational Rectangles on and off.
Control key + M	Toggles Measurement Palette on and off.
Numbers 1 - 9	When viewing a CT series, allows you to quickly select the corresponding preset Window Width/Level setting
L key	Holding down the "L" key while adjusting the window width and level of a series allows you to adjust only the current slice.
F3	Toggles the "Mark Read" designation on and off for the selected exam.
Control Key + Shift + F6	Toggles shutters on/off.
Control Key + Alt key + F6	Toggles 6000 DICOM Overlays on/off
Control Key + F6	Toggles ALL Overlays on/off (iSite screen overlays, iSite Annotations & Measurements, and Embedded and Declared DICOM overlays)
F6	Toggles Screen Overlays on/off for all exams in the active patient.
F7 and F8	The "Turbo CR" keys, used to quickly cycle through plain films in a single exam. F8 will advance the navigation rectangle, F7 will move it backward. These keys will loop, for example if F8 is pressed at the end of a exam row, the navigation rectangle will be moved to the first image.
Comma and Period (, / .)	Increase or decrease the angle for the Edge Enhancement and Edge Detection Image Processing Tools For CLAHE Image Processing, alternately increases or decreases the 'Clip Parameter.'
Home/End keys	Jumps to the first and last images in a selected image series, respectively.

Roll wheel forward or backward	N/A	**Plain Films:** Zoom into or out of the image at the cursor's location **Series:** frame-by-frame review through slices	N/A
Click down mouse wheel and move mouse		**In Cine Mode:** More mouse away from you to increase speed, towards you to decrease.	
Shift-key	Allows selection of multiple images while linking or preparing to print.	N/A	N/A

Hold down the shift key while executing mouse or keyboard controls to temporarily disconnect an image from any links.

The following chart lists keyboard commands that are used independently of the mouse.

Keystroke	Action
Space bar	While cursor is over an image or series, toggles that image as a key image.
Page Up and Page Down	Single-frame review for image series.
Right and Left Arrow Keys	Same function as F7 and F8 (listed directly above.)
Control key + P	Toogles the Diagnostic Monitor Pane Icons in the Navigational Rectangles on and off.
Control key + M	Toggles Measurement Palette on and off
Numbers 1 - 9	When viewing a CT series, allows you to quickly select the corresponding preset Window Width/Level setting
L key	Holding down the "L" key while adjusting the window width and level of a series allows you to adjust only the current slice.
F3	Toggles the "Mark Read" designation on and off for the selected exam
Control Key + Shift + F6	Toggles shutters on/off.
Control Key + Alt key + F6	Toggles 6000 DICOM Overlays on/off
Control Key + F6	Toggles ALL Screen Overlays on/off (iSite screen overlays, iSite Annotations & Measurements, and Embedded and Declared DICOM overlays.)
F6	Toggles Overlays on/off for the active pop-up window.
F7 and F8	The "Turbo CR" keys, used to quickly cycle through plain films in a single exam F8 will advance the navigation rectangle, F7 will move it backward These keys will loop, for example if F8 is pressed at the end of a exam row, the navigation rectangle will be moved to the first image
Comma and Period (, / .)	Decrease and increase the angle for the Edge Enhancement and Edge Detection Image Processing Tools

iSite Radiology Features Reference Sheet

Please note: this Reference Sheet has been organized beginning with the most basic image-selection and viewing features to the most complex image-manipulation features.

How to...	Action
Expand an image or image-series	Double-click the left mouse button on the desired image or image-series.
Adjust Window Width and Level	Left click the image and drag the left mouse button horizontally or vertically, respectively. Default WW/WL, Histogram Calculation and Modality Default values are available for all modalities through the pop-up menus. CT exams will also display preset Window/Level values through the pop-up menu. These values include the Default WW/WL, Abdomen, Brain, Bone, Liver, Lung, Mediastinum and any other custom Window/Levels created by the iSite System Administrator on a site-by-site basis.
Compare (Link) images in an exam	Right-click on an image and select the New Link function from the pop-up menu. Right-click on the image you would like to link and then select the Join Link option.
Select and deselect images or image-series	Place your mouse cursor over the desired image or image-series.
Release any current mouse mode	Left mouse-button click.
Access an image pop-up menu	Right mouse-button click on the desired image or image-series.
Pan	**Plain Films:** With a wheel-mouse, click and drag the wheel-button. With a two button mouse, click the left mouse-button and drag the mouse while holding down the Control Key. **Series:** Click the left mouse button and drag the mouse while holding down the Control Key.
Zoom	**Plain Films:** With a wheel-mouse, roll the mouse wheel back and forth. With a two-button mouse, click the left mouse-button and drag the mouse while holding down the Alt Key. **Series:** Click the left mouse-button and drag

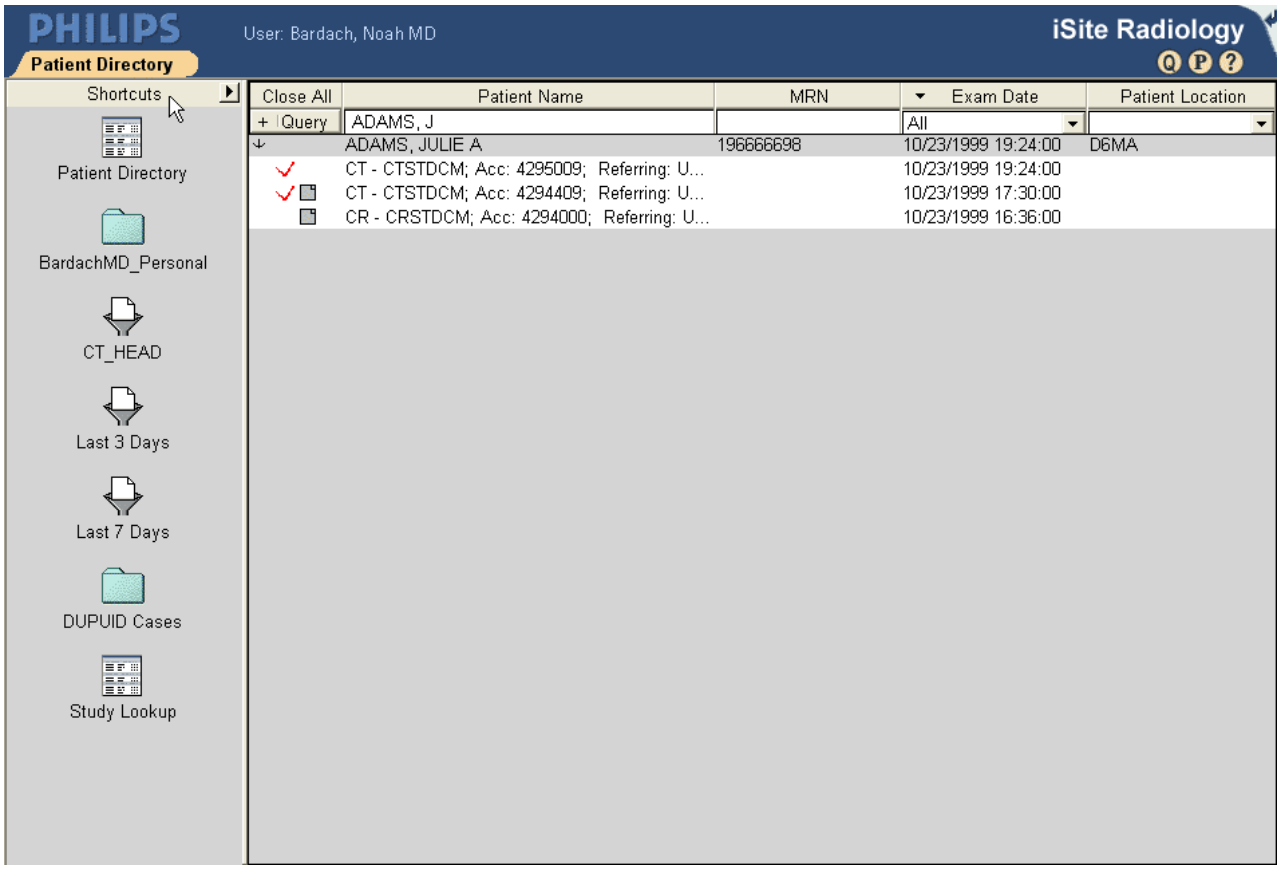
	the mouse while holding the Alt Key.
Frame-by-Frame Review for image series	With a wheel-mouse, roll the mouse wheel back and forth. Alternately, press the up and down arrow keys.
Fast-Cine Review for image series	Fast Cine is enabled by double-clicking a multi-image stack series. Fast Cine will start with an initial rate of 1 FPS.
Access Diagnostic Reports for a exam or Patient	From the worklists, right-click an exam listing and choose "Show Report" from the resulting pop-up menu. From the Canvas Page, right-click the exam-listing of the desired exam in the Patient History or Relevant Exam Timelines and select the "Show Report" option. Alternately, double-click the Exam Summary Window of the desired exam.
Invert brightness and contrast	Right-click on an image and select the Invert function from the pop-up menu. Deselect in the same manner.
Flip an image around the *x* or *y* axis	Right-click on an image, select the "Flip/Rotate/Sort" function from the pop-up menu and choose "Flip Horizontal" or "Flip Vertical".
Rotate an image clockwise or counter-clockwise	Right-click on an image, select the "Flip/Rotate/Sort" function from the pop-up menu and choose "Rotate 90 CW" or "Rotate 90 CCW".
Sort an MR or CT series	Right-click on an image, select the "Flip/Rotate/Sort" function from the pop-up menu and choose "Image Number Ascending", "Image Number Descending", "Table Position Ascending" or "Table Position Descending".
Annotate an image with text or symbols	Access these tools through the pop-up menu by right-clicking on an image and selecting the "Annotations" option. This function is only available in the Diagnostic Monitors and Floating Windows.
Measure lengths, angles or regions of interest	Access these tools through the pop-up menu by right-clicking on an image and selecting the "Measurement" option. This function is only available in the Diagnostic Monitors and Floating Windows.
Apply spine labeling to an image of the spine	Right-click on any image or series which includes the vertebrae and select the Spine Labeling option from the Annotations sub-menu. Click the image where you would like labels inserted in conformance with the Spine Labeling dialog.
Delete Measurements	Right-click the measurement handle and select "Delete Measurements and Annotations" from the pop-up menu. Alternately, place the mouse cursor over the

	measurement and click the "Delete" button. The measurement can also be removed by dragging it out of the image window. This function is only available in the Diagnostic Monitors and Floating Windows.
Edit Measurements Format	Right-click the measurement handle and select edit font or edit line style from the pop-up menu. This function is only available in the Diagnostic Monitors and Floating Windows.
Display Multi-Image Modes	To simultaneously view multiple images from an image series, right-click the image series and choose "Multi-Image Mode" from the pop-up menu. The available options (in column:row notation) are: 1:1, 1:2, 2:1, 2:2, 1:3, 3:3, 3:4, and 4:5. Please note that this option is only available for images in the Diagnostic Monitors and Expanded Windows, not for Thumbnail Images in the Diagnostic Exam Rack.
Mark an image as a "key image"	To designate the active image as a "key image", hit the "space bar".
Temporarily disconnect a linked image	Hold the shift key down while performing image manipulation with the mouse or the keyboard. Please note that this does not apply to images from the same exam.
Unlink images in an exam	Right-click on the image you wish to unlink and select the Unlink option.
Convert an MR slice into a Scout View	Right-click on an image and select the "Scout Line Mode"' function from the pop-up menu.
Increase or decrease the angle for Edge Enhancement, CLAHE and Edge Detection Image Processing Tools	Hover the mouse over the image that has these one of these image processing tools applied and click the "," (comma) key to decrease the degree parameter and the "." (period) to increase the parameter.
Copy to the Windows Clipboard	Right-click on the image you wish to save and select the "Save" function from the pop-up menu. Select "To Clipboard".
View exam information	Right-click the upper portion of the Exam Summary Window then open "Exam Information" from the pop-up menu.
View the available presentation states for an exam	Right-click the upper portion of the Exam Summary Window then open "Presentation States" from the pop-up menu.
Close an exam	Right-click the upper portion of the Exam Summary Window then select "Close Exam" from the pop-up menu.
Toggle the "Marked Read" designation on and off for the active exam.	Hit the F3-key while the mouse is over the exam you wish to "Mark Read".
Hide/Display the Patient History Timelines	Click the (P) Preferences button in the iSite Radiology Control Strip and check or uncheck the "Display Timeline" option in the General

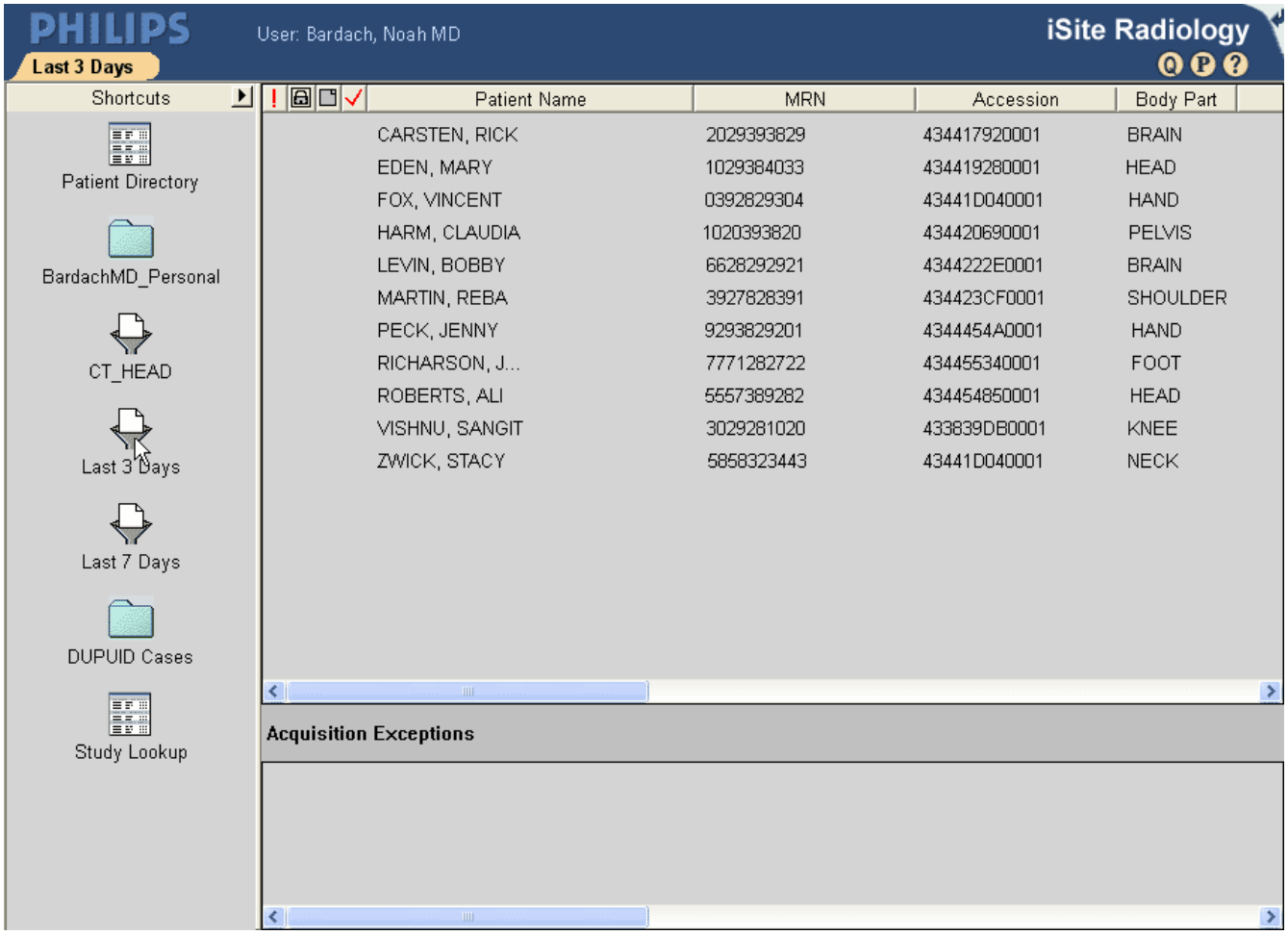
	Preferences Section.
Change between Horizontal and Vertical Rack Modes	Right-click the Exam Summary Window then select "Horizontal Rack" or "Vertical Rack" from the pop-up menu.
Show/Hide Image Overlays	Hitting just F6 will toggle screen overlays on and off for all exams in the active patient. Ctrl + Alt + F6 will toggle only DICOM 6000 overlays on/off. Finally, Ctrl + F6 toggles all overlays on/off (iSite screen overlays, iSite Annotations & Measurements, and Embedded and Declared DICOM Ovelays).
Toggle Diagnostic Monitor Pane Icons in Navigation Rectangles On/Off	Hitting the Control-key + P will toggle the Diagnostic Monitor Pane Icons in the Navigation Rectangles on and off.
Reorder images in an exam row	Place your cursor on the image's gray top margin or bottom annotation area, left-click and drag to a new location.
Print	Right-click on an image and select the "Print" function from the pop-up menu. Select "To Paper Printer" or "To DICOM Printer" as desired.
Save	Right-click on the image you wish to save and select the "Save Image" function from the pop-up menu. Select "to clipboard" or "to file".
Logout	Click the Logout Arrow Button in the upper right-hand corner of the iSite Radiology Control Strip.

The iSite Radiology Shortcuts Bar

The iSite Shortcuts Bar is a customizable way for you to access your most frequently used folders, filters and tools. As seen below, the Shortcuts Bar is located on the left-hand side of the screen. The only time the shortcut bar will not be seen is when you are viewing the iSite Canvas Page. You cannot remove the Shortcuts Bar, or hide it, but you can resize it by placing your cursor on the right divider and dragging.

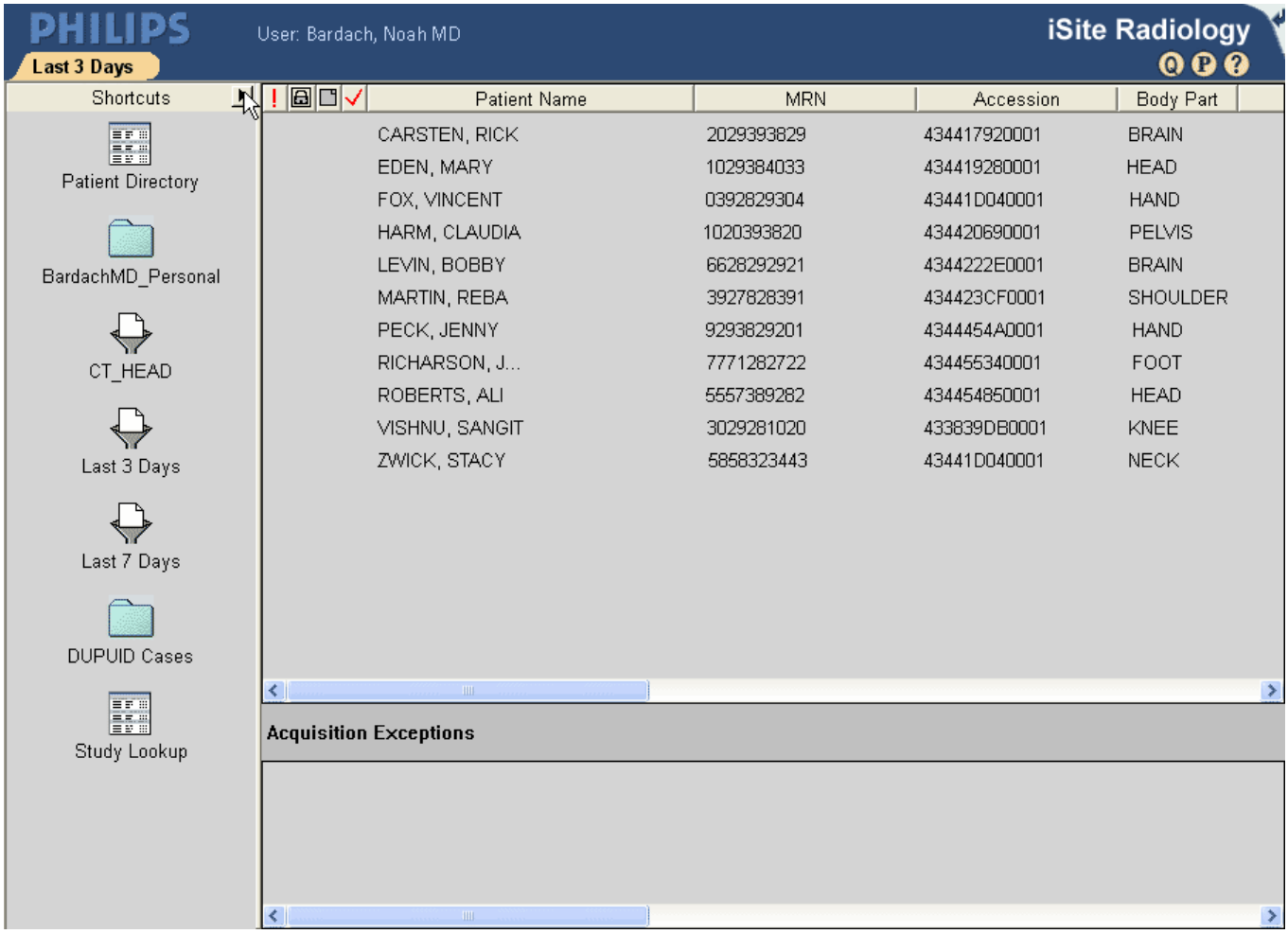


The Shortcuts Bar works in similar fashion to shortcut bars in Microsoft Outlook, Front Page and other common programs. Simply click one of the shortcut links and the area to the right will display the desired content. For example, clicking the "Last 3 Days Filter" shortcut displays the Last 3 Days Tab, as seen below.

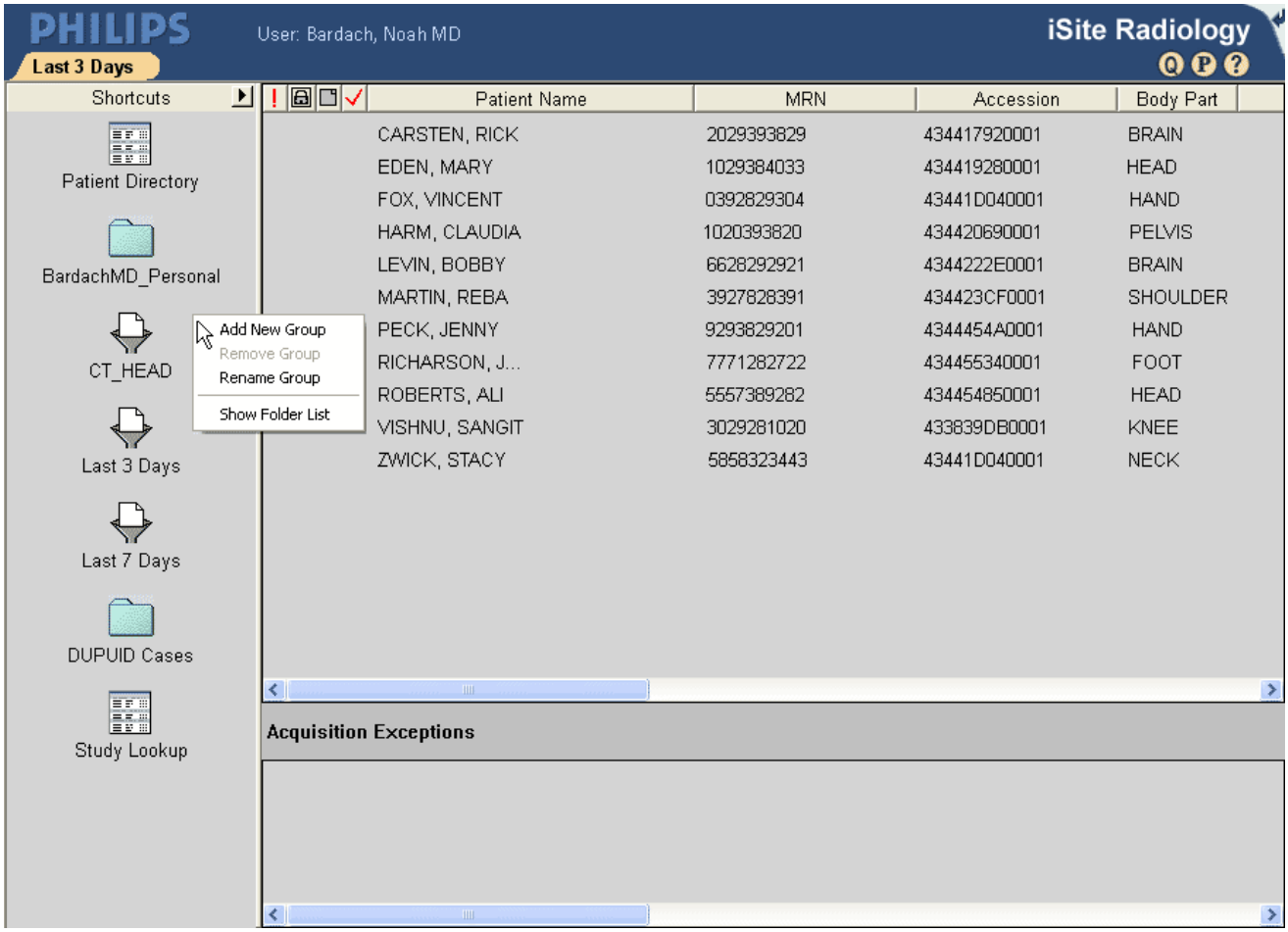


Creating Shortcuts

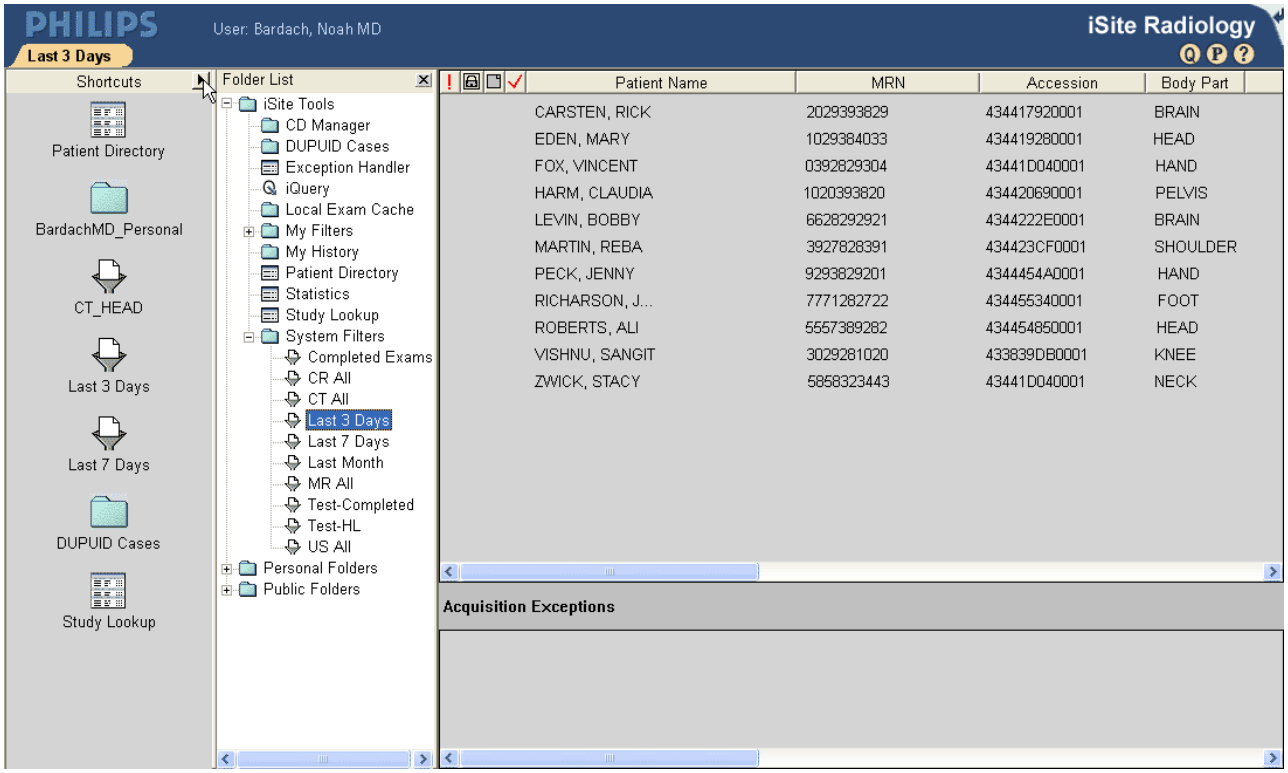
To add a shortcut to the Shortcuts Bar, you must first reveal the iSite Folders List. To do this, left-click the arrow button in the Shortcuts header, as seen below.



Alternately, you can right-click the Shortcuts Bar, shown below, and choose the "Show Folder List" option.



The iSite Folder List will be displayed, as seen below..

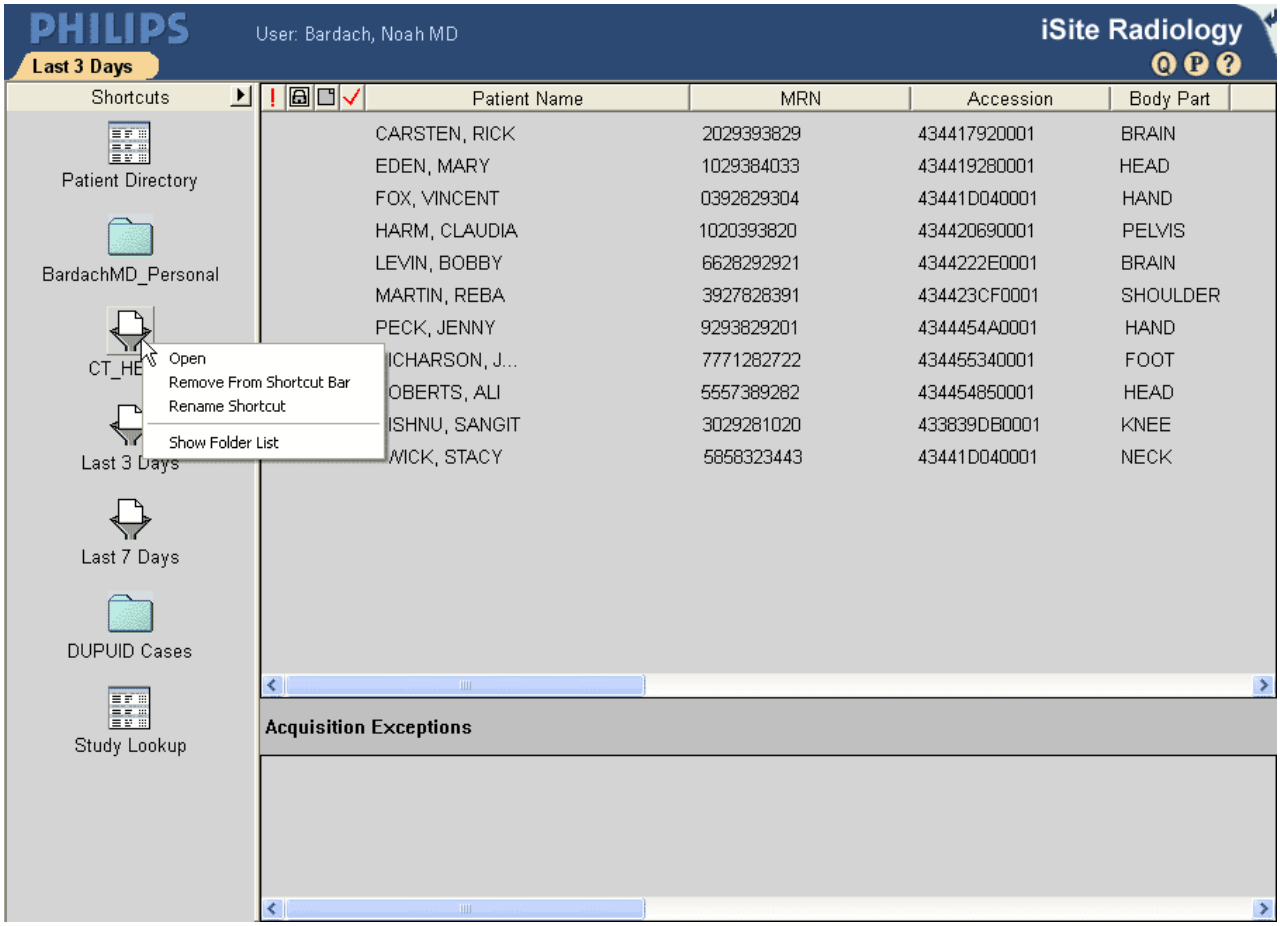


Once you have displayed the iSite Folder List, you can create a shortcut in the Shortcuts Bar simply by dragging an icon to it from the Folder List. You can also create a shortcut by right-clicking an icon and choosing the "Create Shortcut" option from the pop-up menu.

If you have added more shortcuts than can fit in the Shortcut Bar, the button will appear. Click this button to scroll through your shortcuts. You can also deal with too many shortcuts by organizing them into groups, as discussed below.

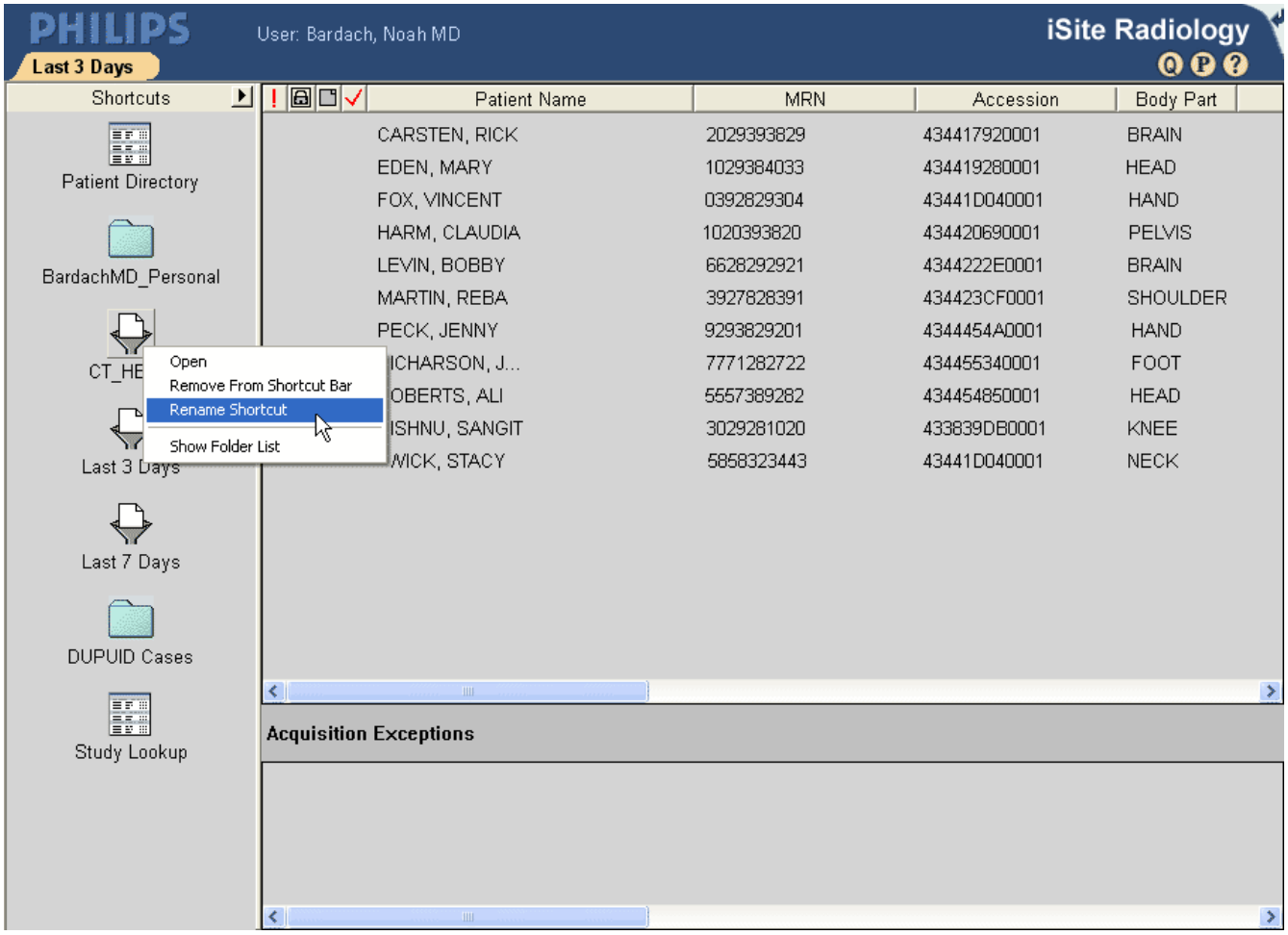
Removing Shortcuts

To remove a shortcut from the Shortcuts Bar, simply right-click the shortcut, as seen below, and select the "Remove from Shortcut Bar" option from the pop-up menu.



Renaming Shortcuts

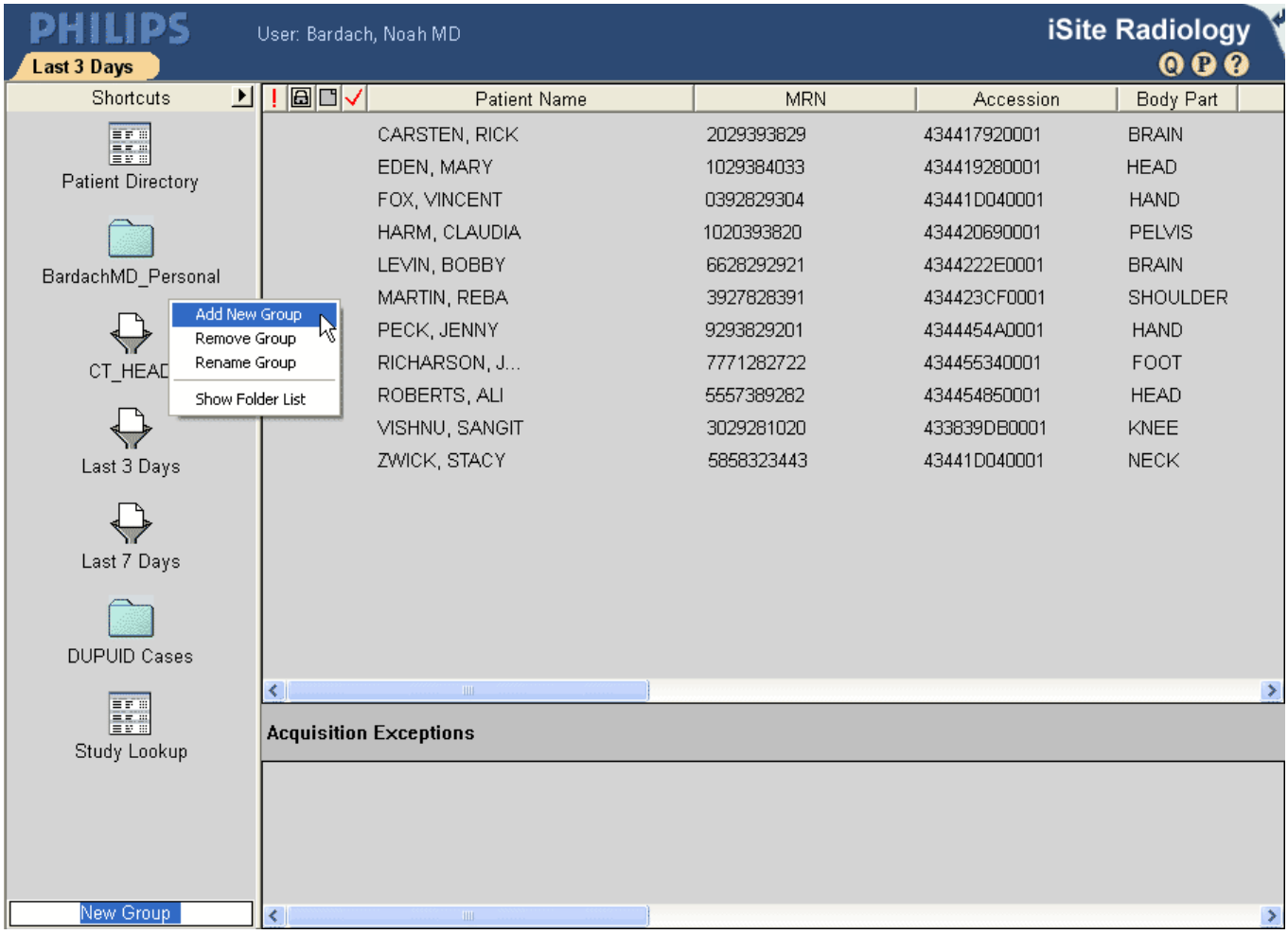
To rename a shortcut in the Shortcuts Bar, simply right-click the shortcut, as seen below, and select the "Rename Shortcut" option from the pop-up menu.



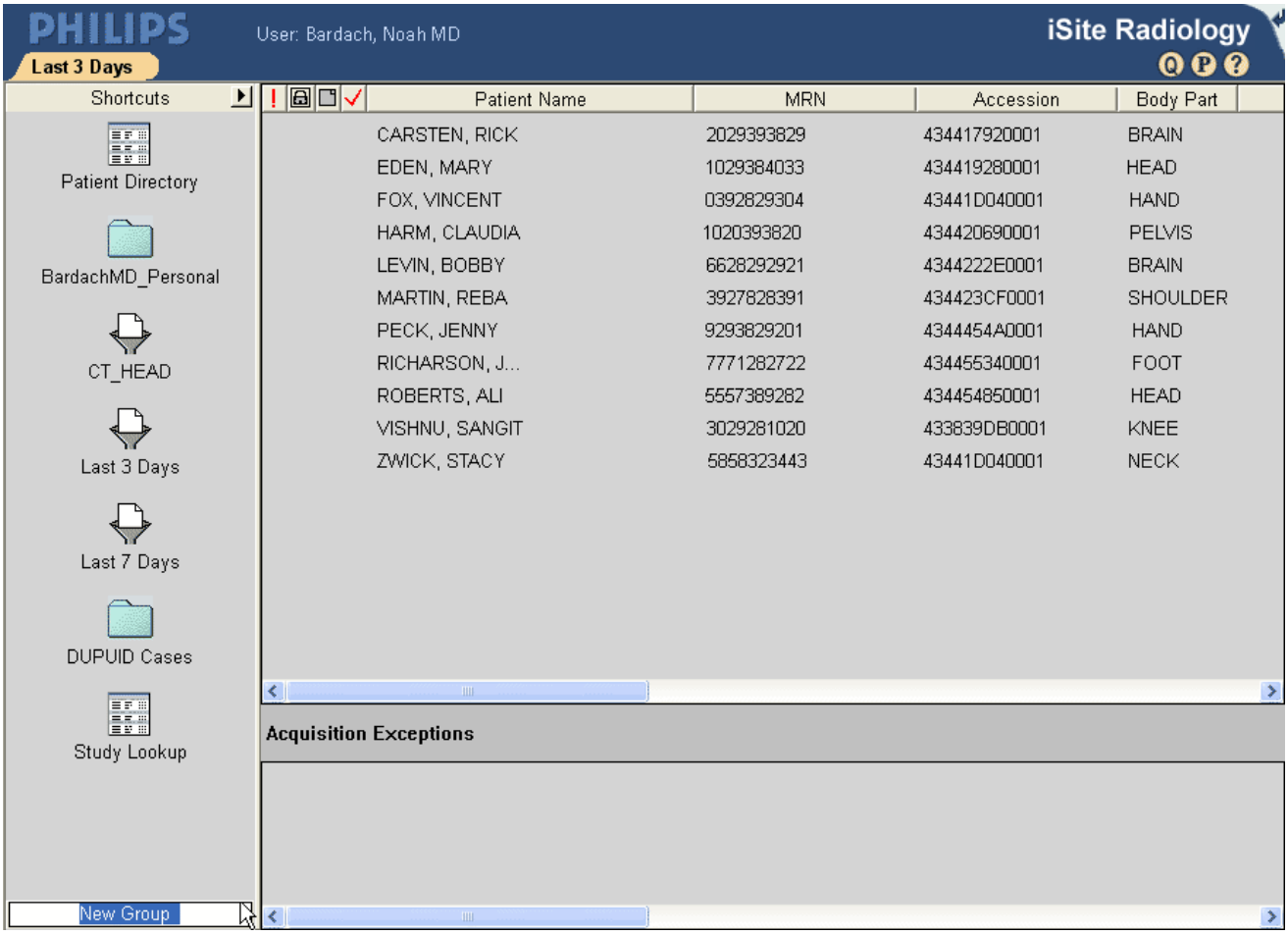
Shortcut Groups

You can easily organize your shortcuts by creating Shortcut Groups. For example, you could create a Shortcut Group titled "Filters" in which to place all of your filter shortcuts. You can add as many groups as you would like. As they accumulate, they will be stacked in the Shortcuts Bar.

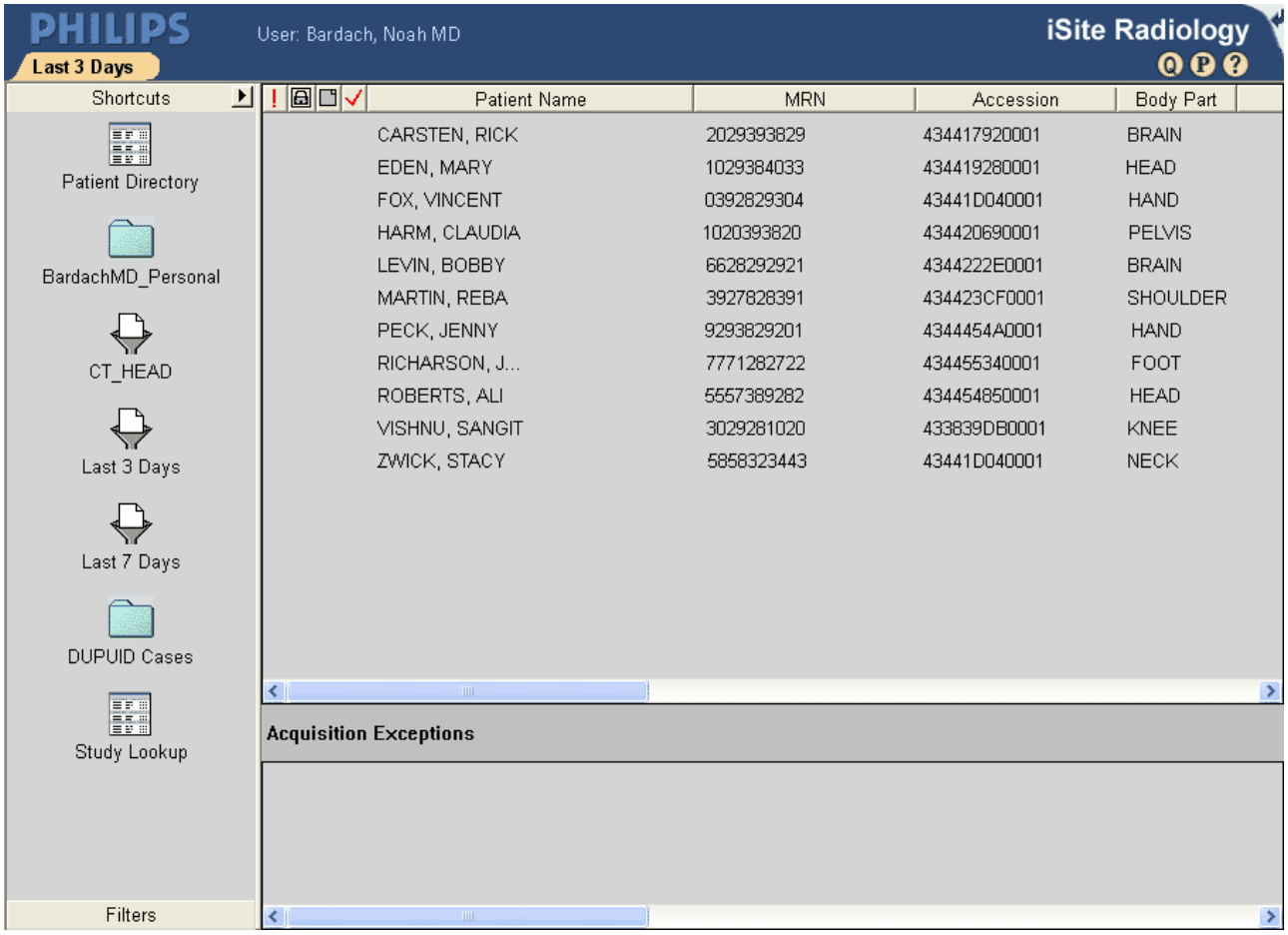
To create a new Shortcut Group, click on the body of the Shortcuts Bar and select "Add New Group" from the pop-up menu, as seen below.



After selecting this option, a text field reading "New Group" will appear at the bottom of the Shortcuts Bar, as seen below.



Type in the name of the new group and hit the "Return" key. The Group Name will be finalized and will be displayed in the small gray Group Header, as seen below. To access the Group, just click the header.

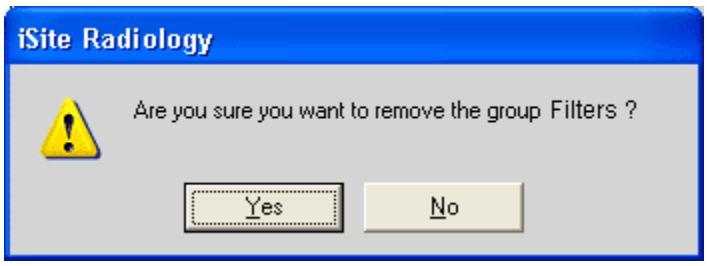


This group can be populated with shortcuts just as described above, by dragging items from the iSite Folder List.

Renaming and Removing Groups

To rename or remove a group, simply right-click the Group Header and choose the appropriate option. If you choose to rename the group, the Group Header will become an editable text-field. Type in the desired name and click the "Return" key.

If you choose to remove a group, please note that you will lose all of the shortcuts present in the group. When you choose the "Remove Group" option, iSite will prompt you with a warning message and will ask you to confirm the removal, as seen below.



If you wish to continue, click "Yes". If not, click "No".

iSite Radiology Folder List

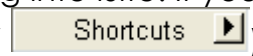
The iSite Folder List works hand-in-hand with the Shortcuts Bar. It is also an important part of the iSite workflow. Please continue on to the chapter "Using the iSite Folder List" by clicking the "Next Chapter" button below.

The iSite Radiology Folder List

The iSite Radiology Folder List, located on the left of the iSite screen, is your gateway to various areas and tools in iSite Radiology. This directory tree functions in the same way as those found in programs such as Windows Explorer and Microsoft Outlook. Folders can contain tools (such as the CD Manager), directories (such as the Patient Directory), preset search filters, other folders and even clinical exams. You can create personalized folders and fill them with links to clinical exams that are important to you, simply by dragging and dropping. Please note that dragging and dropping an exam listing to a folder will not copy the exam or move data from one folder to the next. You are simply moving exam-links.

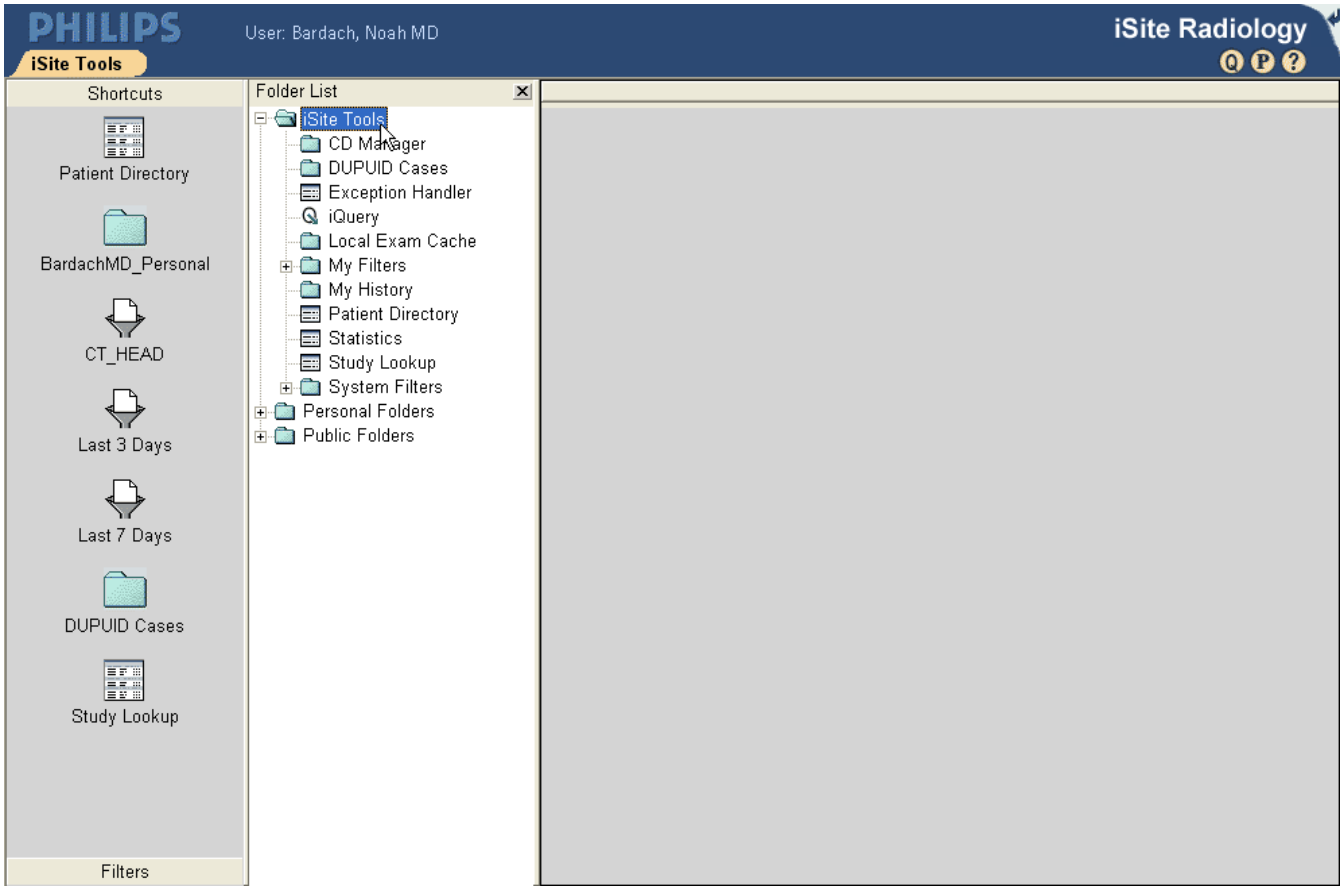
Depending on the permissions set for you by your iSite System Administrator, you may not see all of the Folders displayed in the images below. If you have any questions about your permissions, please contact your local iSite System Administrator.

Introduction

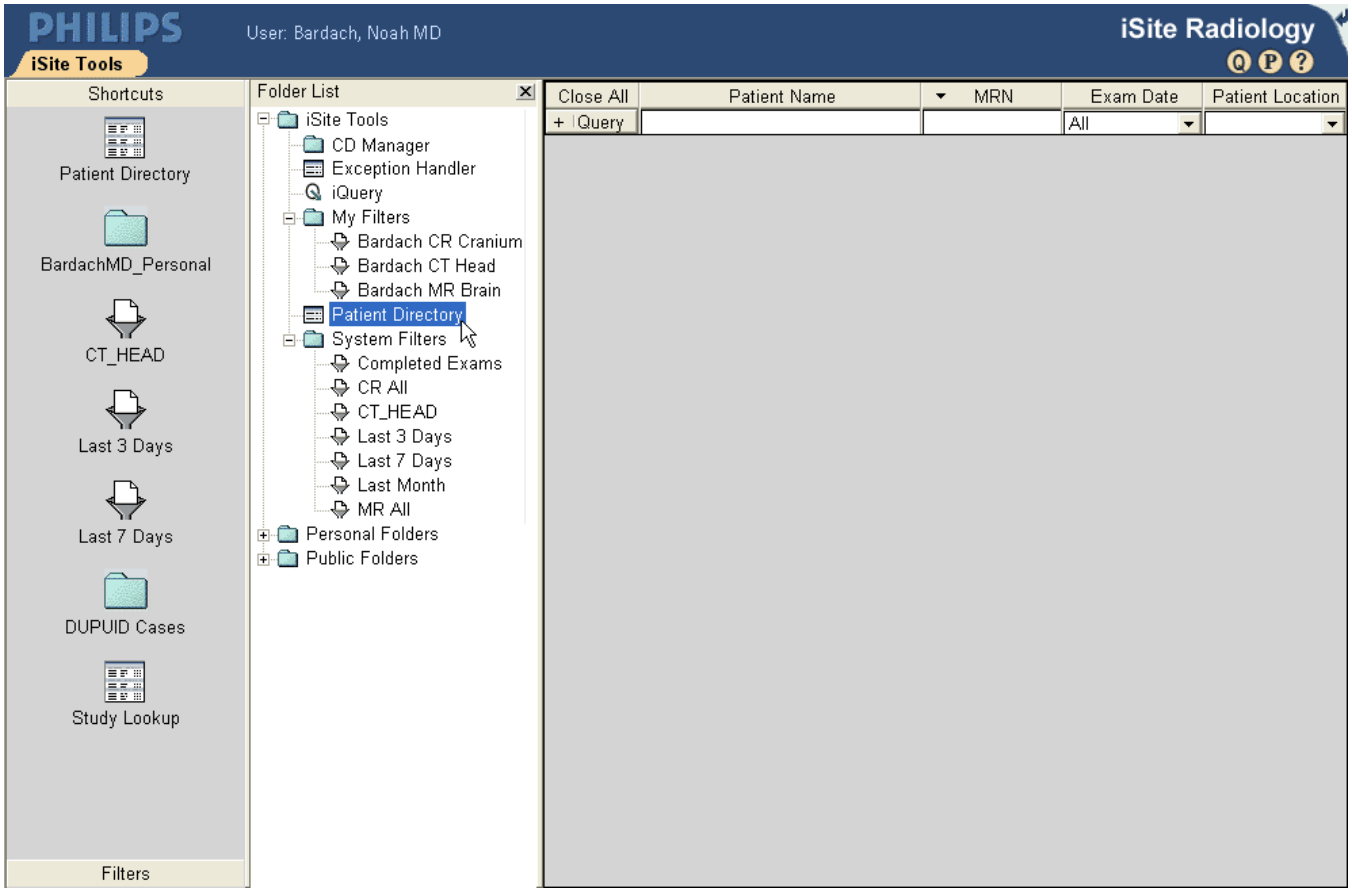
The iSite Folder list may not open immediately when you log into iSite. If you do not see the Folder List, click the arrow button on the Shortcuts Bar (

) or right-click on the Shortcuts Bar and select the "Show Folder List" option.

The iSite Folder List can be viewed in all contexts, except when viewing clinical images (in this context, the Folder List is hidden to provide as much area as possible for viewing images).



The Folder List is the means by which you will access the different areas and tools in iSite. As in Windows Explorer or Microsoft Outlook, clicking a folder or element in the Folder List will change the appearance of the screen accordingly. For example, if you are viewing the contents of a personal folder in the right-hand portion of the screen and you click the "Patient Directory" icon in the Folder List, the right-hand portion of the screen will display the "Patient Directory", as seen below.



Default Folders

The Folder List contains three basic folders: the iSite Tools folder, the Personal Folders and the Public Folders. In addition, iSite Enterprise can incorporate user-defined, system-wide plug-ins. These top level folders are permanent, meaning that they cannot be renamed or deleted. For more information on the nature and contents of each of these three folders, please see below.

iSite Tools

This folder contains the basic tools of the iSite programs. The tools that are present will depend on the user's particular preferences and permissions. The complete list of iSite Tools is displayed below. Please note that available tools are based on user permissions. As such, not all users will have access to all tools. For detailed information on using each of these tools, please refer to the appropriate section of this manual by clicking the links or by choosing a topic from the table of contents.

- **CD Manager:** This tool is used for burning CDs of clinical exams with all of their related diagnostic reports and information. The resulting CD includes an embedded iSite CD Viewer, allowing the user to examine all the clinical images and information without having to connect to the internet or download the iSite Viewer.

- **Exceptions Handler:** This tool is used for viewing, resolving and removing exceptions, exams whose DICOM information conflicts with information from the RIS in anyway that might cause a risk of identity confusion.

- **iQuery:** This tool is used for retrieving studies from remote archives for display in the iSite system.

- **MyFilters:** While initially empty, this folder will contain all of your personalized search filters. These filters are created in the preferences, by clicking the "P" button in the upper-right of the iSite Control Strip and selecting the "Filters" subheading from the menu at left. Filters can be based on combinations of modality, body part, exam code, date, patient age and other criteria. Click any one of the search filters and the results will be displayed at right.

- **Patient Directory:** This tool is used to search the iSite server for exams. Ad hoc searches can be made using Patient Name, MRN, Exam Date, Patient Location, Modality, Referring Physician and other criteria.

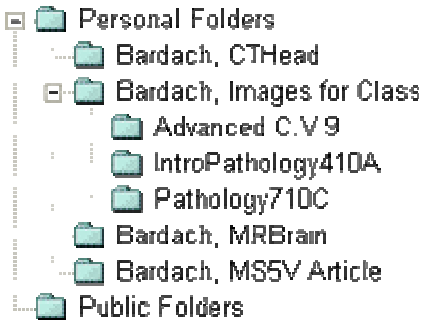
- **System Filters:** This folder contains all of the system's default search filters. These include searches based on "Completed Exams", "CR All", "CT All", "Last 3 Days", "Last 7 Days", "Last Month" and "MR All". Click any one of the search filters and the results will be displayed at right.

- **My History:** This folder contains the last 100 exams you have viewed. Additional exam listing information includes "User" and "Read by" fields.

- **Statistics:** iSite System Administrators have access to a full range of statistics and billing information from this folder.

Personal Folders

Initially empty, this folder is designed to hold your personally created folders. You can use these folders to create special collections of exam-links. For example, if you were writing a paper on a certain type of disease, you could create a folder and fill it with links to exams that display effects of the disease. Another example would be to create a personal folder for teaching exams, as seen below in the folder titled "Bardach, Images for Class". You can add up to 25 sub-folders.



The example above demonstrates how the user has placed four folders in the Personal Folders directory. One of these folders, "Bardach, Images for Class" has three sub-folders in it.

The contents of this folder are only visible to the specific user who created it. If you log out of the system on a certain computer and log back in on a different one you, and only you, will be able to see your Personal Folders.

There are only a few limitations to the Personal Folders. A folder cannot contain more than 500 exam-links or 25 sub-folders. Nor can the folder tree be more than 4 levels deep.

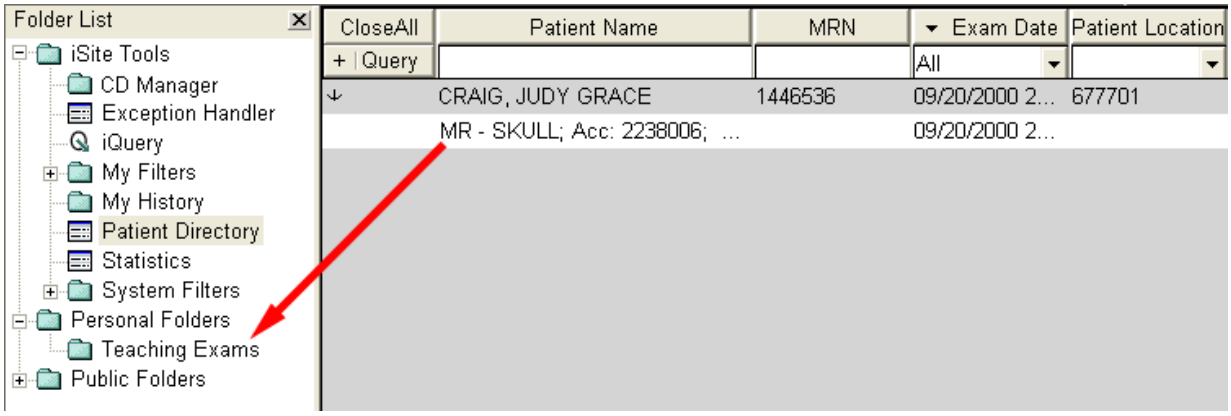
Exams can be dragged and dropped from one Personal Folder to another. To move an exam, simply drag and drop. To copy an exam from one folder to another, hold down the Control-key, then click, drag and drop.

Public Folders

Like the Personal Folders, the Public Folders can contain other folders created by the user or links to clinical exams. The only difference between the Public and Personal Folders is that the former is available for viewing by all users who have permission to view the Public Folders.

Adding Exam-Links to Folders

The basic purpose of the iSite Folders is to organize and store links to specific exams. Adding exam-links to a folder can be done in several different ways. The easiest way is to simply drag and drop an exam listing to a folder, just like in Windows Explorer, as seen below.



When you are in the Canvas Page, you can add exam-links to a folder by right-clicking either an exam listing in the Patient History Timeline or the Exam Margin and selecting the "Add Exam to Folder" option from the pop-up menu.

Exam-links can be copied from one folder to another, as opposed to moving them, by holding down the Control Key while clicking and dragging.

Right-Click Menu

The right-click menu provides access to features that allow you to customize the iSite Folder List, such as creating new folders, renaming folders, deleting folders and creating shortcuts in the Shortcut bar. An image of the right-click menu is seen below. Please note that not all options are available when right-clicking on certain folders.

Shortcuts Bar

The Shortcuts Bar, located to the immediate left of the iSite Folder List, is a tool designed to help you organize special links that you use frequently. The Shortcuts Bar and its operation are described fully in the chapter of the same name.

Shortcuts are created by either right-clicking an icon in the iSite Folder List and selecting the "Create Shortcut" option or by simply dragging and dropping an icon into the Shortcuts Bar.

In addition, you can toggle the folder list on and off by right-clicking the Shortcuts Bar and selecting either the "Show Folder List" or "Hide Folder List" options, depending upon which is visible.

Creating New Folders

This feature works in the same way that you create new folders in Windows Explorer or Microsoft Outlook, to name a few. New folders can be created in the iSite Folder List by right-clicking a folder in which you wish to add the new folder and selecting the "Add New Folder" option from the pop-up menu. Please note that new folders cannot be added to the iSite Tools folder.

Renaming Folders

Folders can be renamed in the iSite Folder List by right-clicking the folder and selecting the "Rename Folder" option from the pop-up menu. The folder's name will become an editable text field. Type the desired name and then click the "Return" key. Please note that some folders cannot be renamed. In these instances, when you right-click the folder, the "Rename Folder" option will be grayed out.

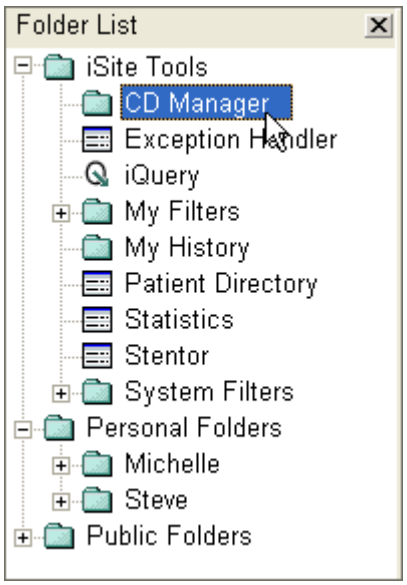
iSite CD Manager

Introduction

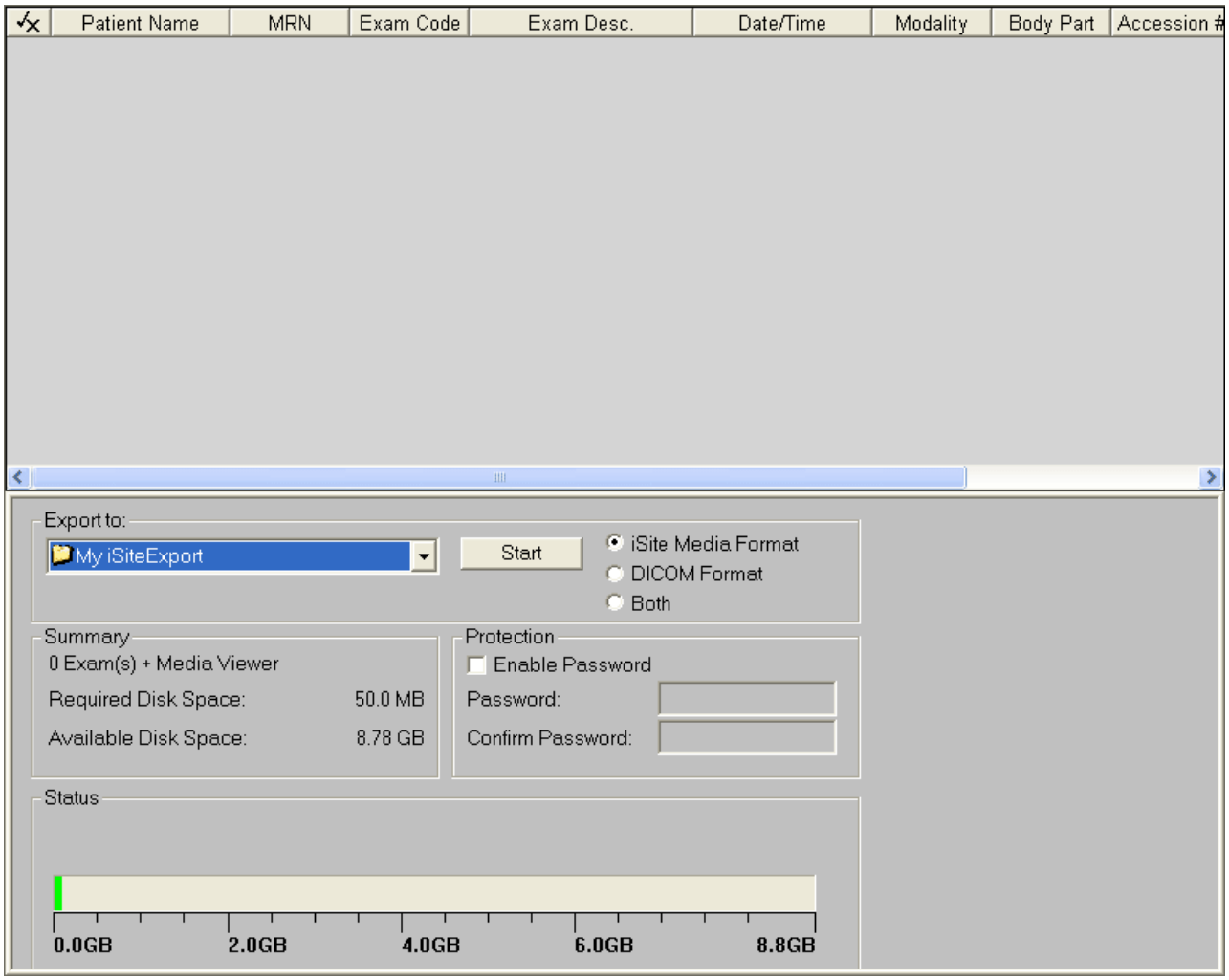
The iSite CD Manager allows you to create personalized CDs that include an encapsulated version of iSite Enterprise and patient exams of your choosing. The patient images are all lossless (unless the iSite Server received lossy images from another source). Diagnostic Reports are exported along with the patient exams. Please note that Exam Memos and some Diagnostic Report fields are not exported to the CD. The program works by exporting the necessary materials, including patient images and information (such as reports), to a portable media or local destination. These "export folders" can then be written to a direct media, such as a CD, DVD or zip disk. If you are running Windows XP, you will be able to burn CDs directly from iSite without having to exit the application. The CD Manager provides for easy distribution but, most importantly, no internet connection is needed to view patient exams.

Please note that exam memos, allergies and other clinical information is not exported.

To access the CD Manager, click the "CD Manager" listing in the iSite Radiology Folder list, as seen below.



The following window will be displayed.

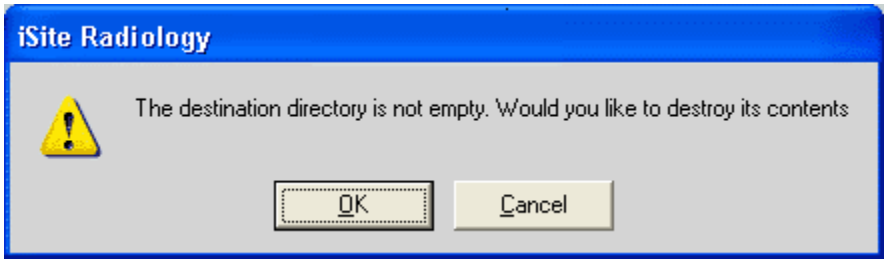


Please note that, in the image above, the "Export to:" dropdown will only display a CD Drive if the user's system is Windows XP and their machine includes a CD Drive or if a separate drive is attached to the machine being used. If neither of these conditions are met, the "Export to:" field will show a local directory: C:\Documents and Settings*username*\My Documents\My iSiteExport.

CD Manager Window

The upper portion of the window above will contain exam listings once they are added to the "CD Manager" folder. The bottom portion contains the controls for the export. The controls are as follows:

- **Export to:** The field in this folder shows you the location of the export folder, where the images, information and iSite Control will be written. If you want to create a CD and you are connected to an internal or external CD drive, choose your CD drive, as seen above. If you would like to select the desired location from a browser window, pull down the menu and choose the "Browse..." option. If you choose an existing folder its contents will be overwritten by the export. If iSite detects pre-existing files, it will display the following message:



Hit "OK" to overwrite the contents or "Cancel" to return to the CD Manager and reconfigure the export destination.

If the destination is not ready, for example if you have selected the CD drive but no media is present, iSite will display a warning, as seen below.

To the right of the Export destination field are three radio buttons that allow you to choose the format in which the selected studies will be exported.

"iSite Media Format" is the standard, wavelet-encoded iSite format. This is the default selection.

DICOM Format is the raw, unadulterated DICOM Part 10 data from the modality. If this option is selected the DICOM information will be stored in a separate directory on the portable media called "DICOM". This directory can be copied directly into other DICOM systems and archives.

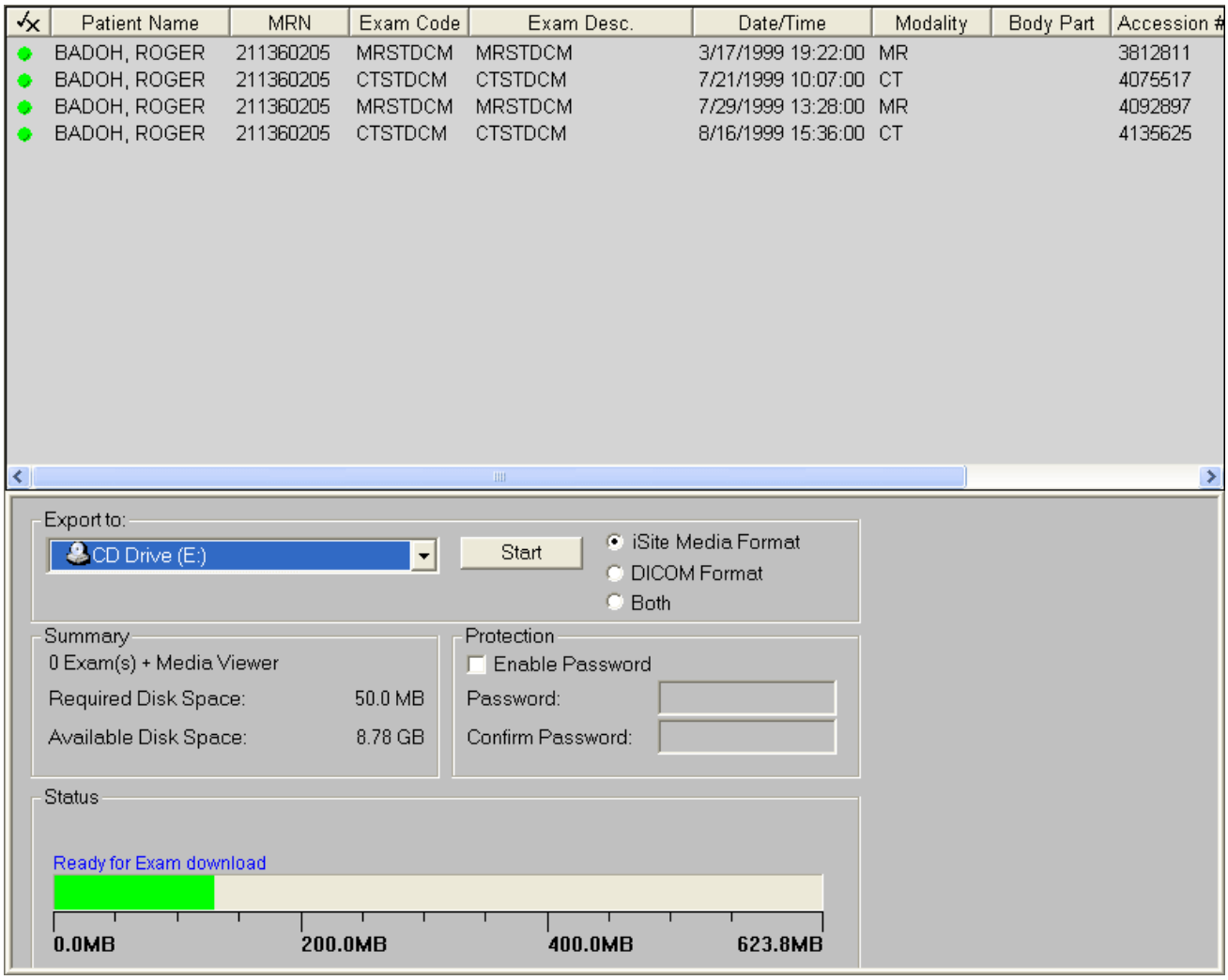
The "Start" button, located to the left of the export location, initiates the export.

- **Summary:** This feature shows the Required Disk Space and the Available Disk Space for a given job. Please note that the initial Required Disk Space reflects the size of the CD version of the iSite control.
- **Protection:** This feature is designed to protect patient confidentiality, allowing you to require a password when a user tries to use the CD or other media. Click the "Enable" check-box, enter and then confirm your password. If the "Enabled" checkbox is checked and no password is entered, iSite will display the following message when the "Start" button is clicked:

Adding Patient Exams

Adding patient exams to the CD Manager can be done in two different ways. Patient Exam listings can be dragged and dropped into the CD Manager folder from any filter or directory. You could also add all of a patient's exams by dragging the patient listing to the CD Manager folder. Secondly, exams can be added to the CD Manager by right-clicking an exam listing in the Patient History Timeline or an Exam-Row Margin and selecting the "Add Exam to Folder" option.

As you add exams to the CD Manager folder, the worklist will be populated with exam listings, as seen below.



Please note, if you logout with exam links in the CD Manager, those links will be lost. You will have to recompile the CD export list again once you log back in.

Writing the Media

When you have added all the desired patient exams to the CD Manager, begin exporting by clicking the "Start" button. The status bar at the bottom of the screen will provide updated information on the progress of the export. In addition, each exam being written to the media will display a symbol to indicate the progress of that individual exam. A legend to the exam status symbols is seen below:

- Ready to be written
- In Progress
- Completed
- Failed
- Inactive

When the export has finished, the exam status will change to a check-mark (✓). Once the program has finished exporting the media, your export folder will have the following contents:

When these contents are written to a CD or other insertable media, that disk can be inserted into any PC and the user can view the patient exams using the embedded iSite program. There is no need for an internet connection. When the disk is first placed into a computer, it will play automatically. The following splash screen will appear.

PHILIPS
iSite CD Direct
iSite Version 3.5.0 Build 11 ALPHA
Tuesday, October 18, 2005
CE
5000 Marina Blvd., Suite 100, Brisbane, CA 94005. U.S.A.
Koninklijke Philips Electronics N.V. 2005
All rights are reserved. Reporduction or transmission in whole or in part, in any form or by any means, elecronic, menchanical or otherwise, is prohibited without the prior written consent of the copyright owner. Copyrights and all other proprietary rights in any software and related documentation ("Software") made available to you rest exclusively with Philips or its licensors. No title or ownership in the Software is conferred to you. Use of the Software is subject to the end user license conditions as are availalbe on request. TO the maximum extent permitted by law, you shall not decompile and/or reverse engineer the software or any part thereof.

If the Media Export has been protected with a password, you will see the following login screen. If not, you will be taken directly to the Media Exports Patient Directory.

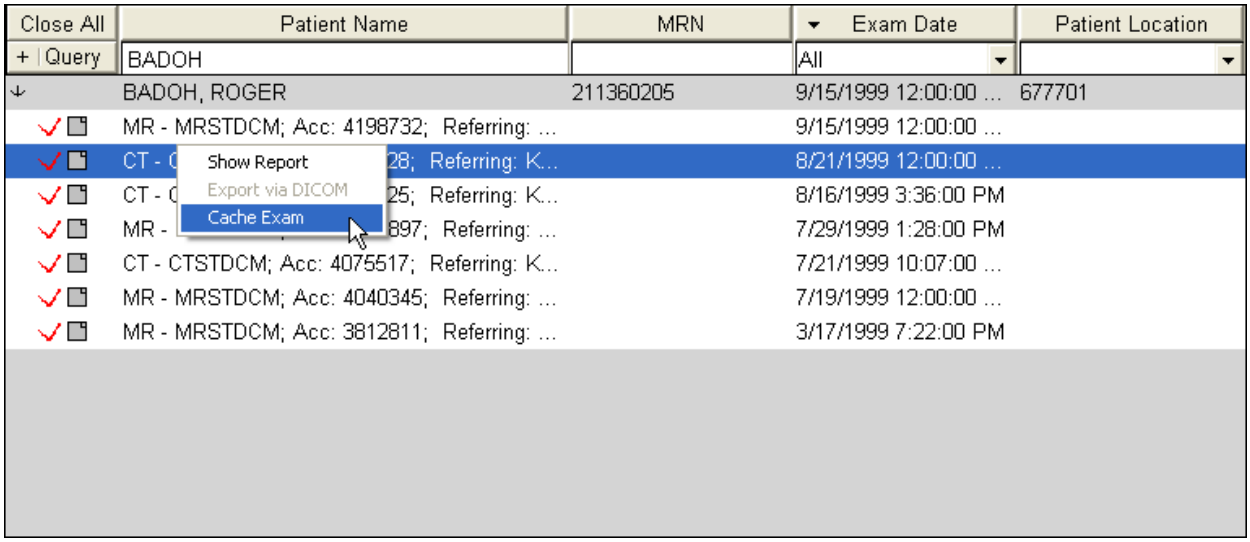
iSiteViewer
PHILIPS
iSite CD Direct
Logon
Password
Log In
Koninklijke Philips Electronics N.V. 2005
All rights are reserved. Reporduction or transmission in whole or in part, in any form or by any means, electronic, mechanical or otherwise, is prohibited without the prior written consent of the copyright owner. Copyrights and all other proprietary rights in any software and related documentation ("Software") made available to you rest exclusively with Philips or its licensors. No title or ownership in the Software is conferred to you. Use of the Software is subject to the enduser license conditions as are availalbe on request. To the maximum extent permitted by law, you shall not decompile and/or reverse engineer the software or any part thereof.

When the user logs in, he or she will be presented with a Patient Directory in which all exams stored on the disk are displayed. A Quick Reference Guide and iSite CD Direct Help Manual are also displayed for the user's convenience.

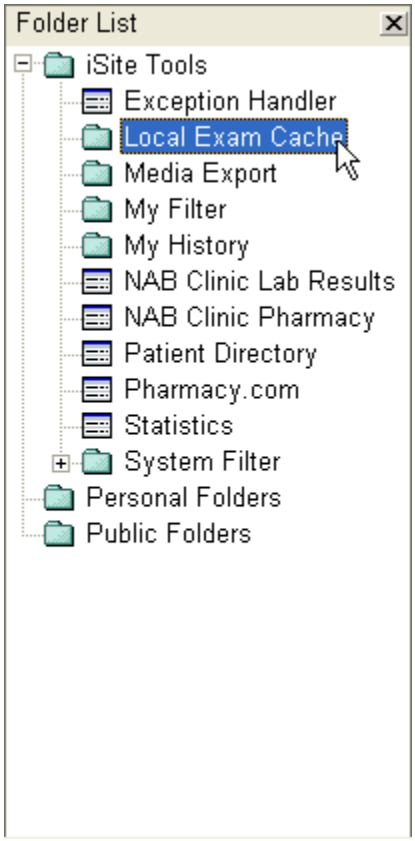
Local Exam Cache

iSite allows users to download patient exams to their local machines. This feature helps speed up access to patient exams when iSite is being used remotely (not from the Main Location).

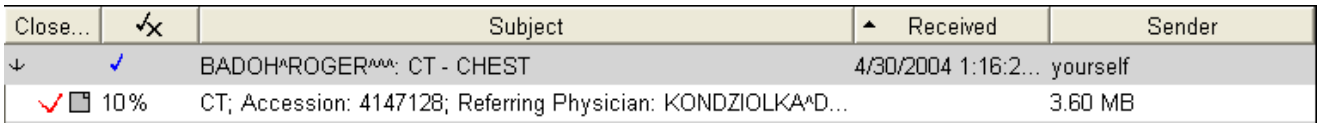
To cache an exam locally, right-click the exam listing in a Filter Worklist, the Patient Directory or in the Patient History Timeline, and select the "Cache Exam" option, as seen below.


Close All
Patient Name
MRN
Exam Date
Patient Location
+ Query
BADOH
All
BADOH, ROGER 211360205 9/15/1999 12:00:00 ... 677701
MR - MRSTDCM; Acc: 4198732; Referring: ... 9/15/1999 12:00:00 ...
CT - 28; Referring: K... 8/21/1999 12:00:00 ...
Show Report
Export via DICOM
Cache Exam
CT - 25; Referring: K... 8/16/1999 3:36:00 PM
MR - 897; Referring: ... 7/29/1999 1:28:00 PM
CT - CTSTDCM; Acc: 4075517; Referring: K... 7/21/1999 10:07:00 ...
MR - MRSTDCM; Acc: 4040345; Referring: ... 7/19/1999 12:00:00 ...
MR - MRSTDCM; Acc: 3812811; Referring: ... 3/17/1999 7:22:00 PM

Upon selecting the "Cache Exam" option, iSite will download the exam to a location specified in the Local Exam Caching Section of the User Preferences. If you want to see the progress of the download, click the Local Exam Cache folder in the iSite Folder List, as seen below.

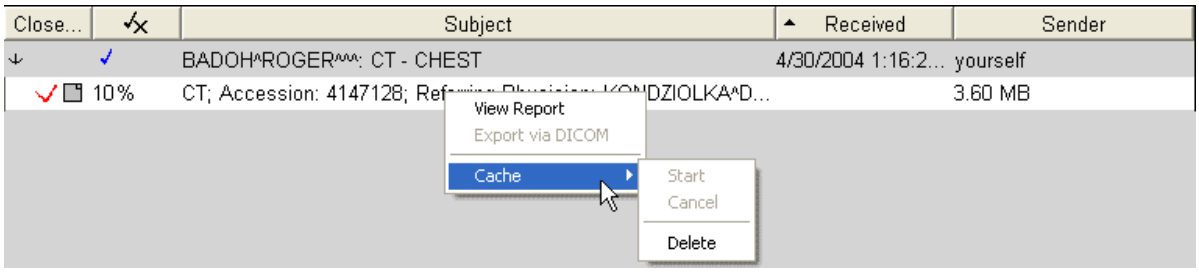


The Local Exam Cache Folder displays all exams that have been cached locally. In addition, the individual listings will display progress information as the exam is cached, as seen at the left of the image below.



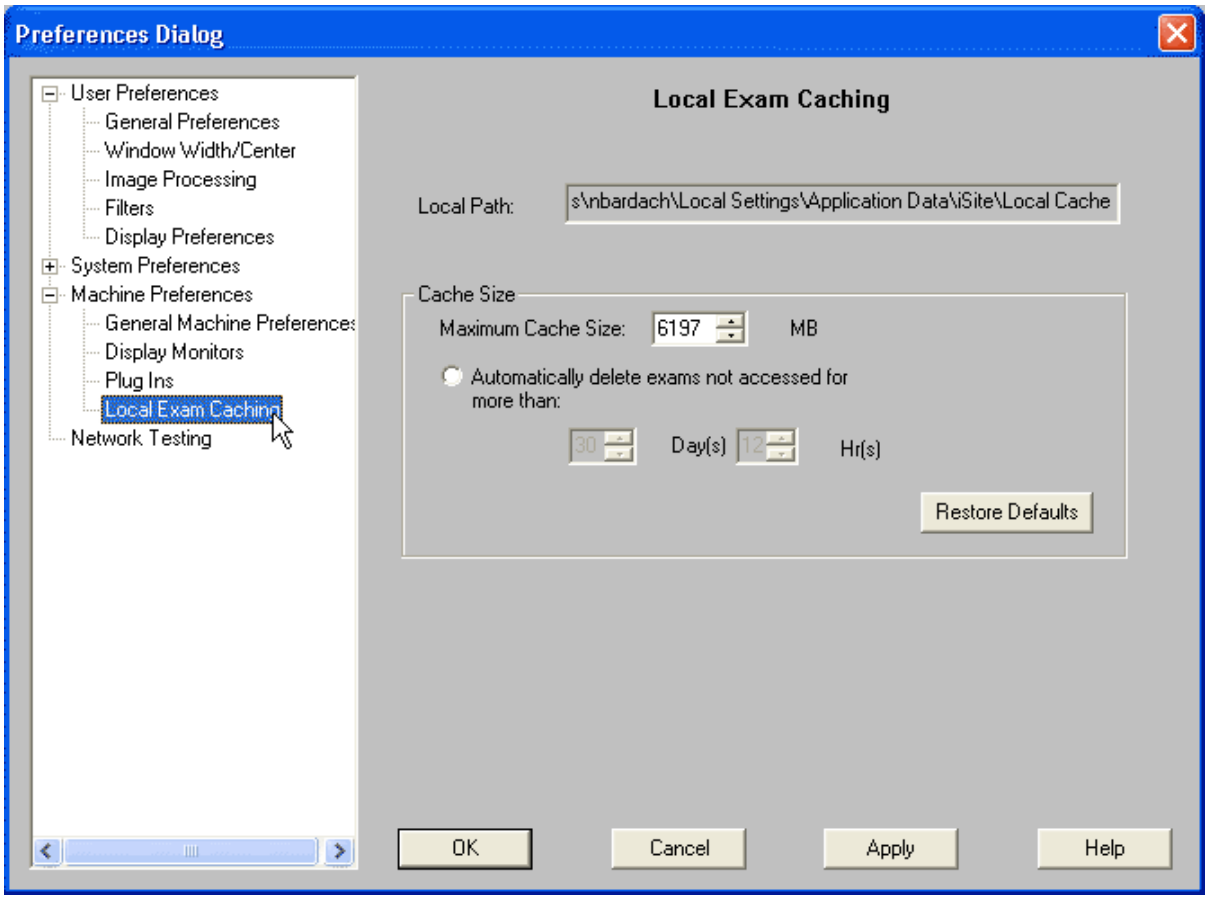
As can be seen from the image above, the exam listings in the Local Exam Cache provide information about the patient and exam that has been cached. The columns include, from left to right, Close (exam level listings), Status ( ), Subject (Patient name, Modality, Body Part), Received and Sender. The list can be sorted by clicking these columns. The Status icon in the exam listing indicates whether the exam was successfully cached.

Right-clicking individual exam listings provides access to a pop-up menu with additional options, seen below. The Diagnostic Report for the exam, if available, can be viewed by selecting the "View Report" option. If the exam is in the process of being cached, you can "Cancel" the download, or start it if it has yet to begin. If the locally cached exam is no longer necessary, select the "Delete" option to remove it from your local machine.



To open an exam for viewing, simply double-click the exam listing.

Options for the Local Exam Cache are configured in the iSite Preferences. To access these options, click the Preferences Button ("P") in the iSite Control Strip, open the Machine Preferences section and click "Local Exam Caching". The following window will appear:



The Local Path section shows the full path of the location where exams are cached. In the Cache Size area, you can set the Maximum Cache Size in Megabytes. If you would like iSite to automatically delete exams that have not been accessed for a certain amount of time, click the radio button and set the period in Days and Hours. To restore default settings, click the "Restore Defaults" button. When finished click the "Apply" button to preserve your changes.

Personalizing iSite Radiology General and System-wide Settings

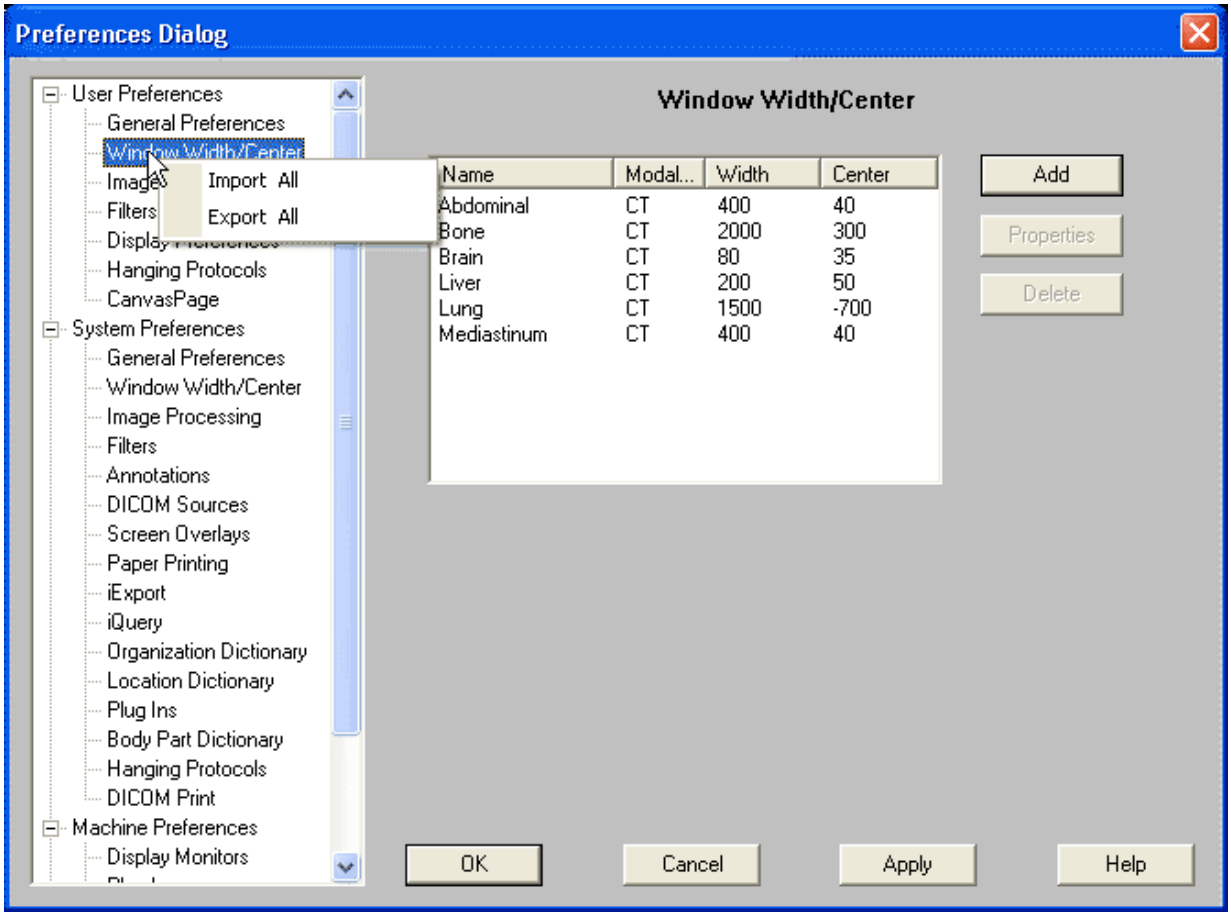
One of the most potent features of iSite Radiology is its ability to be customized to fit the user's individual needs. iSite Radiology can recognize a particular user on login and load that user's specific settings. Among the user-specifiable settings are the way in which exams are hung, the types of exams displayed, the window width and level settings for a particular modality, the type of information displayed with each exam and numerous other aspects of radiology reading. If you are to reap the full benefits that iSite Radiology offers, it is very important that you take the time to carefully personalize your iSite Radiology profile.

The personalization of iSite Radiology can be done on several different levels. Users can personalize their own account-specific preferences, while iSite System Administrators can customize options at a system level for an entire institution. These "System Preferences" are only visible to iSite System Administrators.

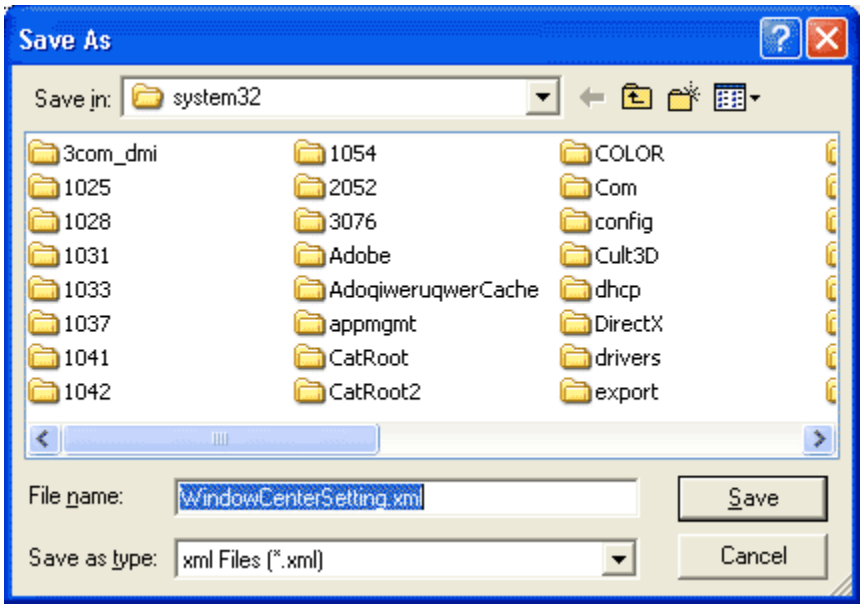
Importing and Exporting Preferences

Many preference settings can be imported and exported to facilitate setting up User and System Preferences. The User Preferences that can be imported and exported are Window Width/Center and Filters. The System Preferences that can be imported and exported are Window Width/Center, Filters, Annotation, DICOM Sources, Screen Overlays, Paper Printing, Organization Dictionary, Location Dictionary and Body Part Dictionary.

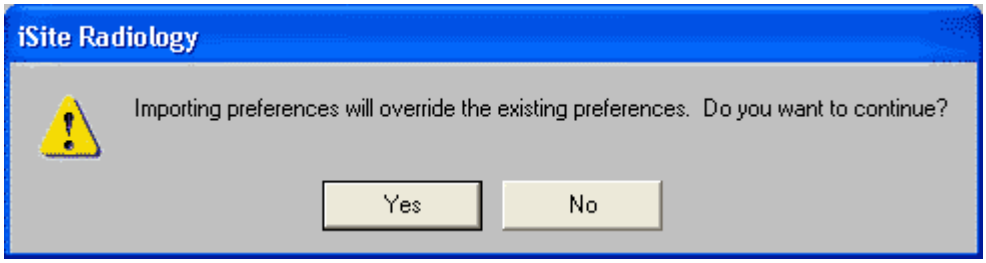
To import or export a preference group, select that group in the preference tree by left-clicking, then right-click. The resulting pop-up menu will display both import and export options, as seen below:



If you select the import option, a browse window will open and you will be prompted to select the specific .xml file to import. If you select the export option, you will be prompted to save the specific .xml file that corresponds to the preference group you have selected, as seen below.



Please note that importing preferences will override any preferences in the system. The following warning will be displayed when you import preferences:



User Preferences

User preferences are those preferences which you can personalize and which are available only to you. If you are not a iSite System Administrator, you will only have access to the User Preferences and the Machine Preferences.

To begin personalizing iSite, click the Preferences (P) button, located in the upper right-hand corner of the iSite Control Strip.

There are three sections to the Preferences Dialog.

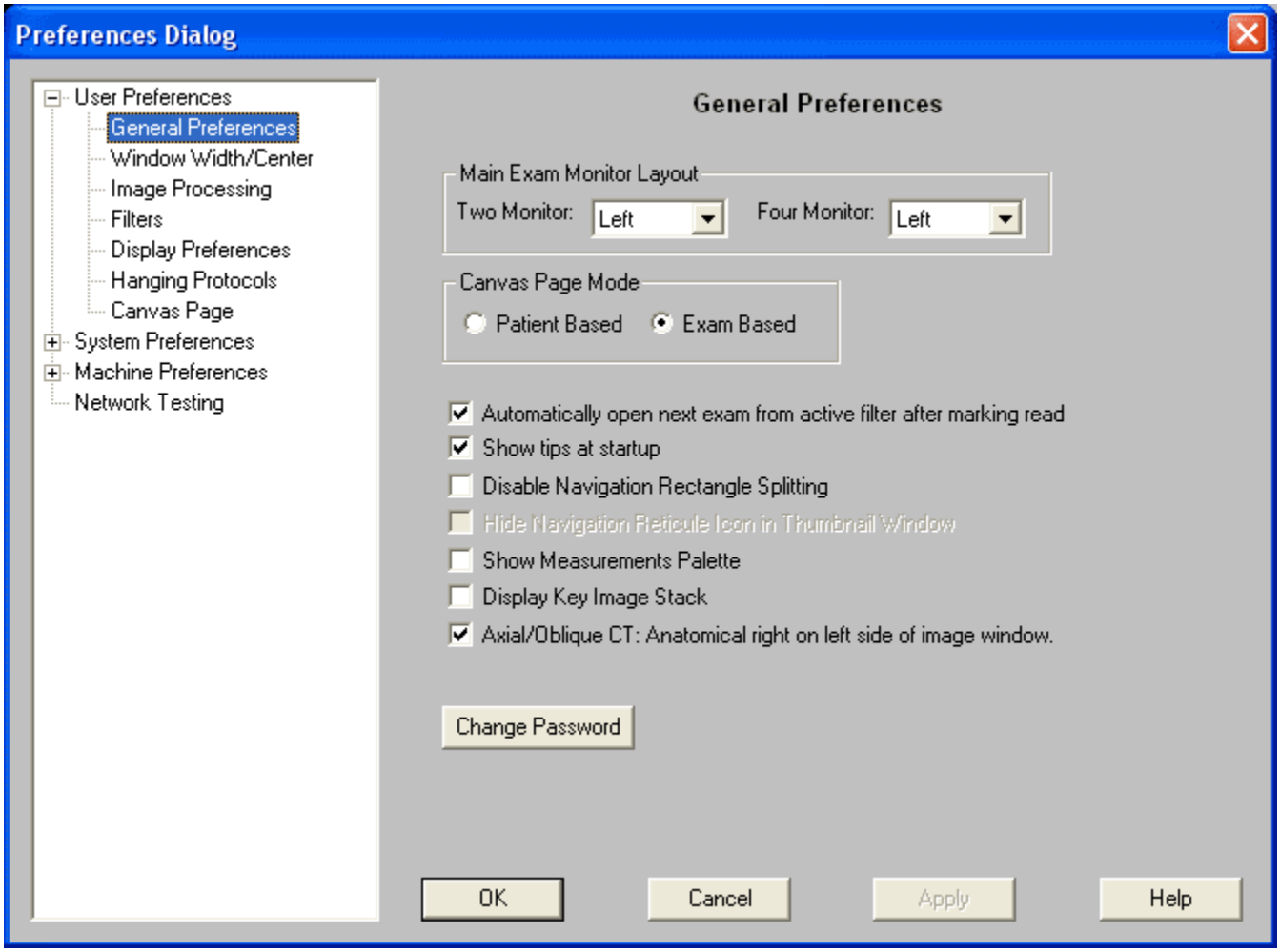
1. **User Preferences:** this section allows the currently logged-in user to customize their user preferences.

2. **Systems Preferences:** this section the iSite System Administrator to customize system-wide settings that will affect every user. System Preferences are only available to administrators and are not visible to standard users.

3. **Machine Preferences:** this section allows you to configure settings related to the machine on which you are currently working.

The second and third preference options are only available to administrators and are not visible to standard users. If you have any questions about the administrative preferences discussed below, please do not hesitate to contact Philips Global PACS Customer Care at any hour by calling (877) 328-2808 or by sending email to isitecare@philips.com.

Upon clicking the Preferences button, the "Preferences Dialog" will be displayed, as seen below. This is where almost all of the personalization of iSite Radiology will take place.



General Preferences: In this area you will set the basic properties of your iSite Radiology account.

Main Exam Monitor Layout: these options let you specify which of your Diagnostic Monitors should display the Main Exam.

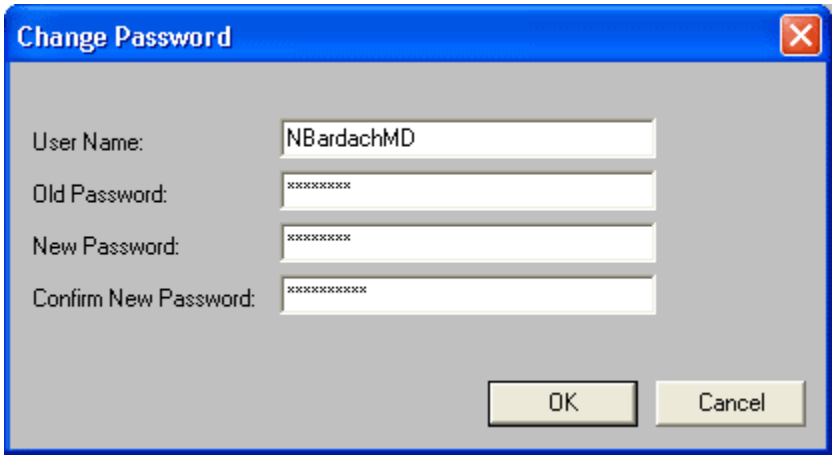
Canvas Page Mode: these options specify whether exams displayed in your Canvas Page are organized by patient or by exam.

Several options are provided to help you configure iSite Radiology to maximize your work environment:

- If you wish iSite Radiology to automatically open the next exam in Worklist Filters when you mark an exam "Read", click the corresponding checkbox.
- iSite Radiology shows helpful tips at login, if you wish to disable this feature, uncheck the "Show tips at startup" button.
- If you wish to disable the Navigation Rectangle Splitting for your Canvas Page Navigation Rectangles, check that box.

- If you want the measurements palette to be displayed automatically when your are viewing images, check the "Show Measurement Palette" box.
- Clicking the "Display Key Image Stack" checkbox displays the Key Image Series at the beginning of each Exam Rack.
- Axial/Oblique CT...: Click this option if you want iSite to automatically display axial and oblique CTs such that the anatomical right is displayed on the left, regardless of the initial orientation of the image. Please note that the visibility of this option is dependent on the System Preferences set by your institution's iSite System Administrator.

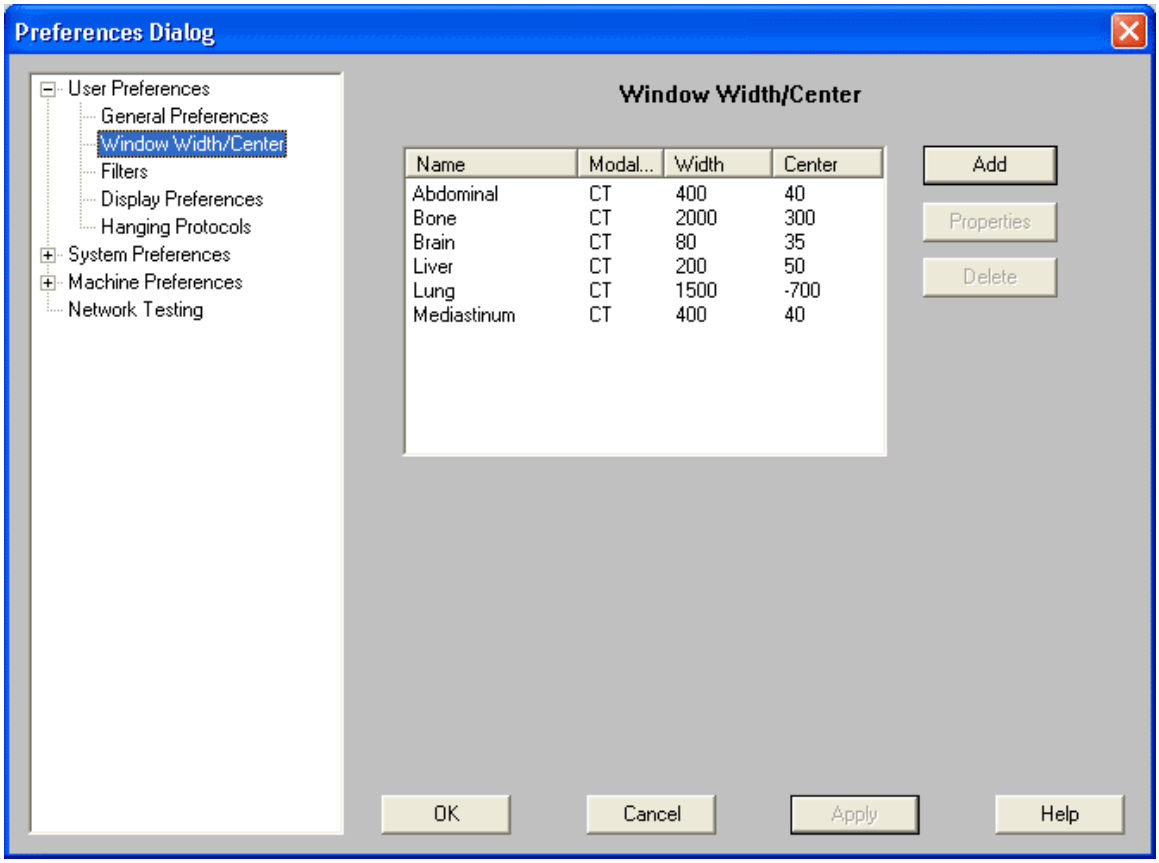
If you wish to change your password, click the "Change Password" button. The following window will appear.



Enter information as necessary and then click the "Change Password" button. If you wish to cancel the password change and return to the preferences dialog, click the "Cancel" button.

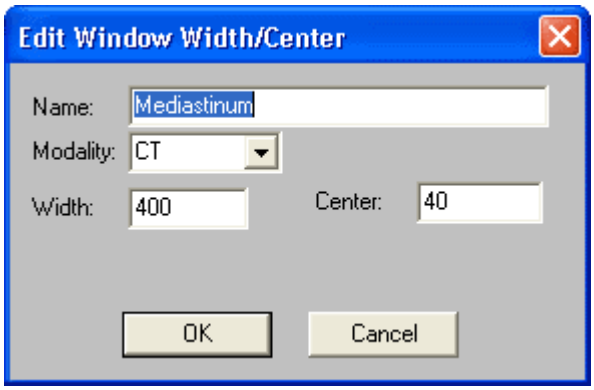
When you have finished in the General Preferences, you can either click the "OK" button to close the preferences or click another item to continue.

Window Width/Center: The next area in the User Preferences window is the Window Center Settings tab, shown below.



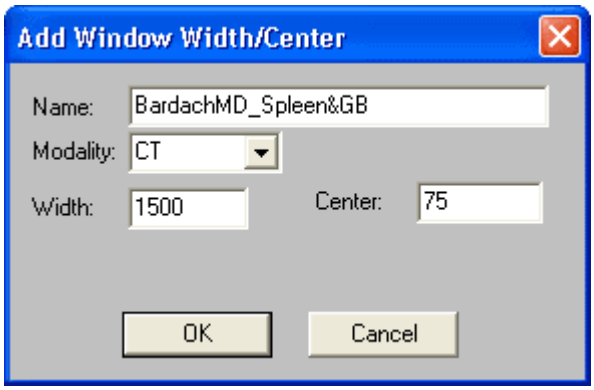
Displayed in the Window Center Settings tab are the default Window Width and Level settings used for each CT body part. iSite Radiology comes hardcoded with the settings shown above but these settings can be edited to suit your personal viewing needs. In addition, new body part settings can be added to the list.

To edit or view the properties of a particular setting, highlight that setting with your mouse and click the "Properties" button. The following window will be displayed.

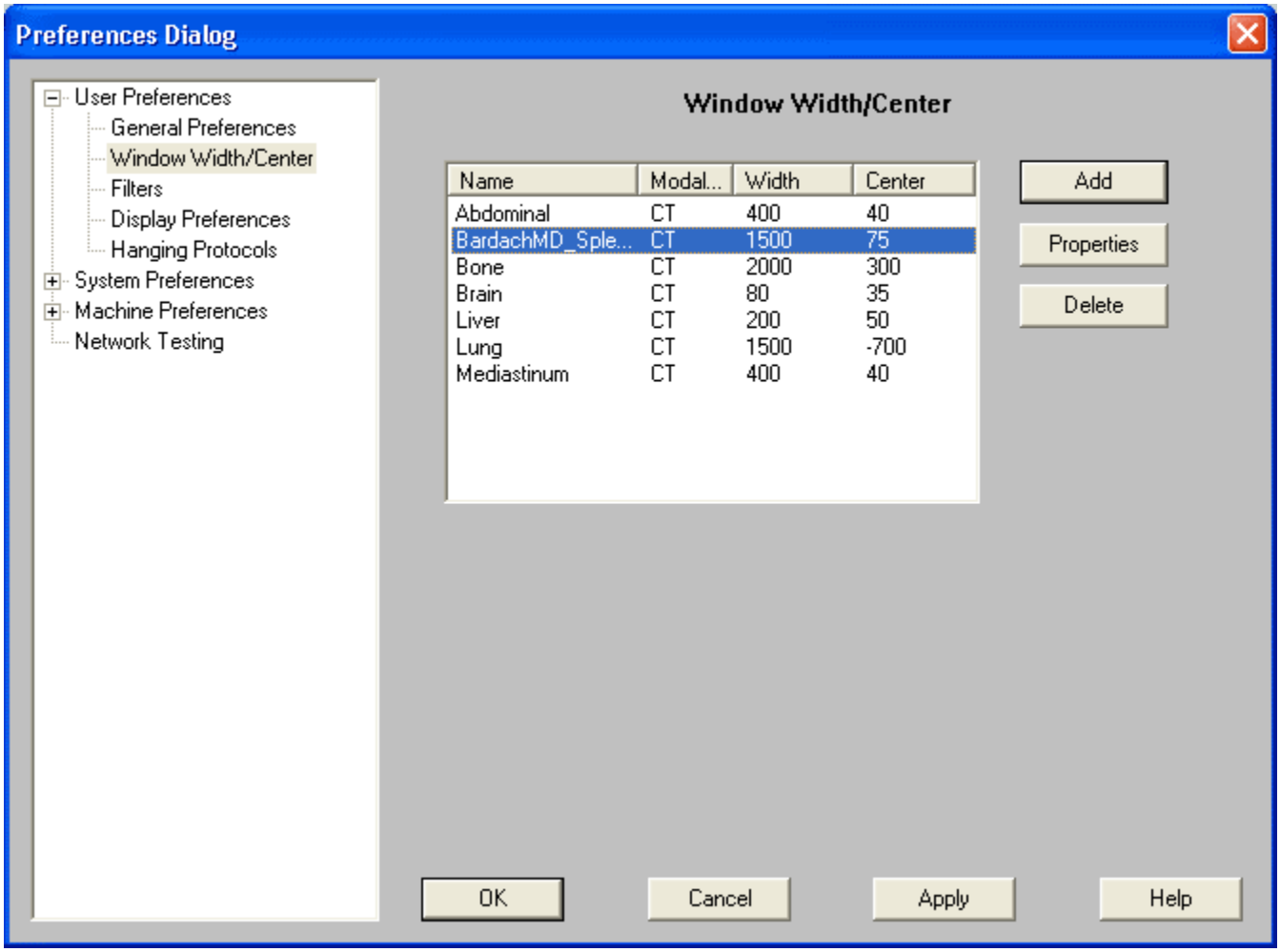


Edit the Name, Width or Center fields as desired and click the "OK" button. You will be returned to the Window Center Settings tab and your changes will be visible in the window.

To create a new Window Center setting, click the "Add" button. A blank "Edit Window Center" dialog will appear. Enter the name, window and center settings as desired and click the "OK" button, as shown below.

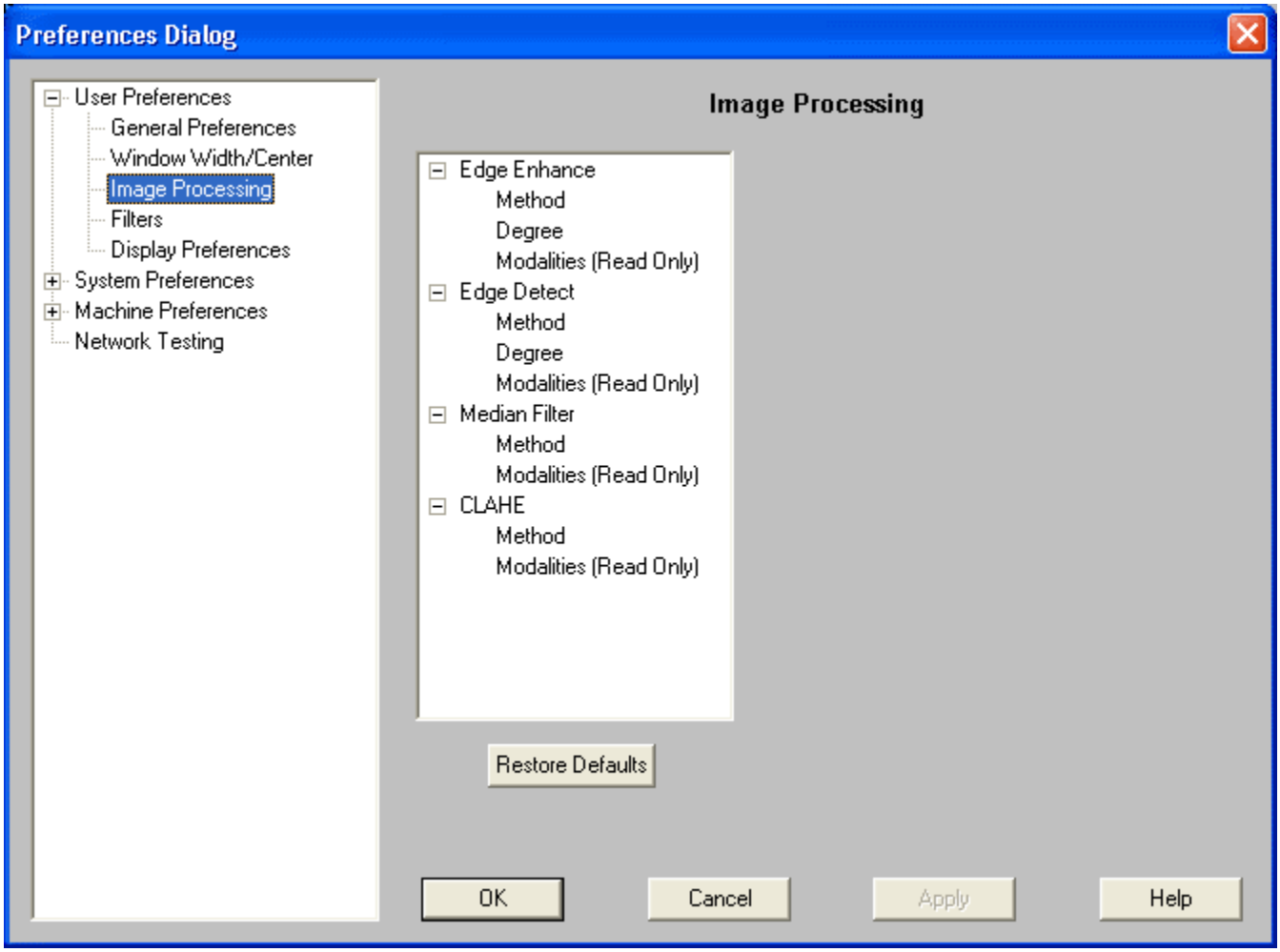


You will be returned to the Window Center Settings tab and the new Window Center Setting will be displayed in the list, as seen below.



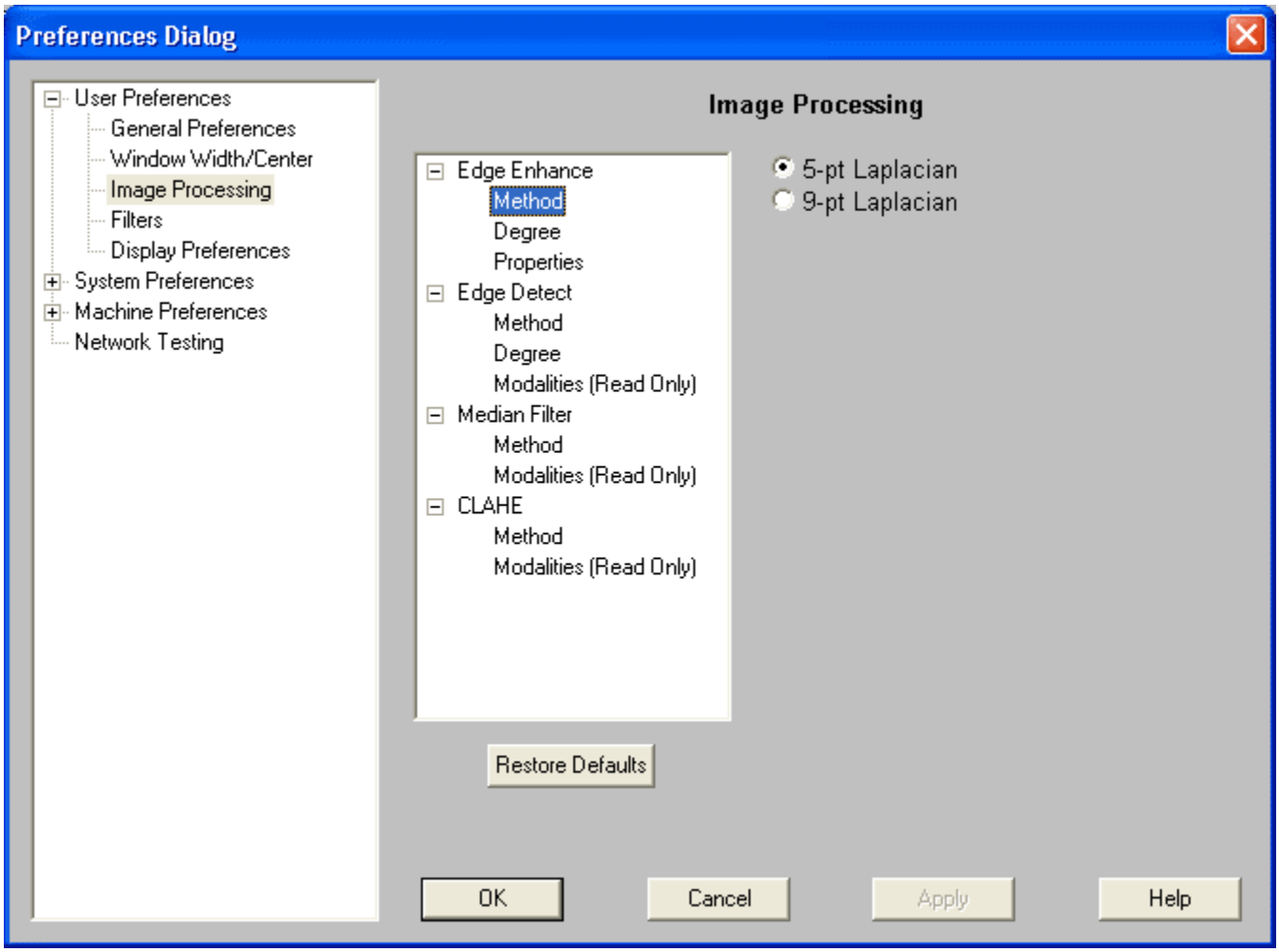
When you have finished in the Window Center Settings tab, you can either click the "OK" button to return to the Modality Worklist or click another tab to continue.

Image Processing: To access the settings for iSite's Image Processing features, click the "Image Processing" listing, as seen below.



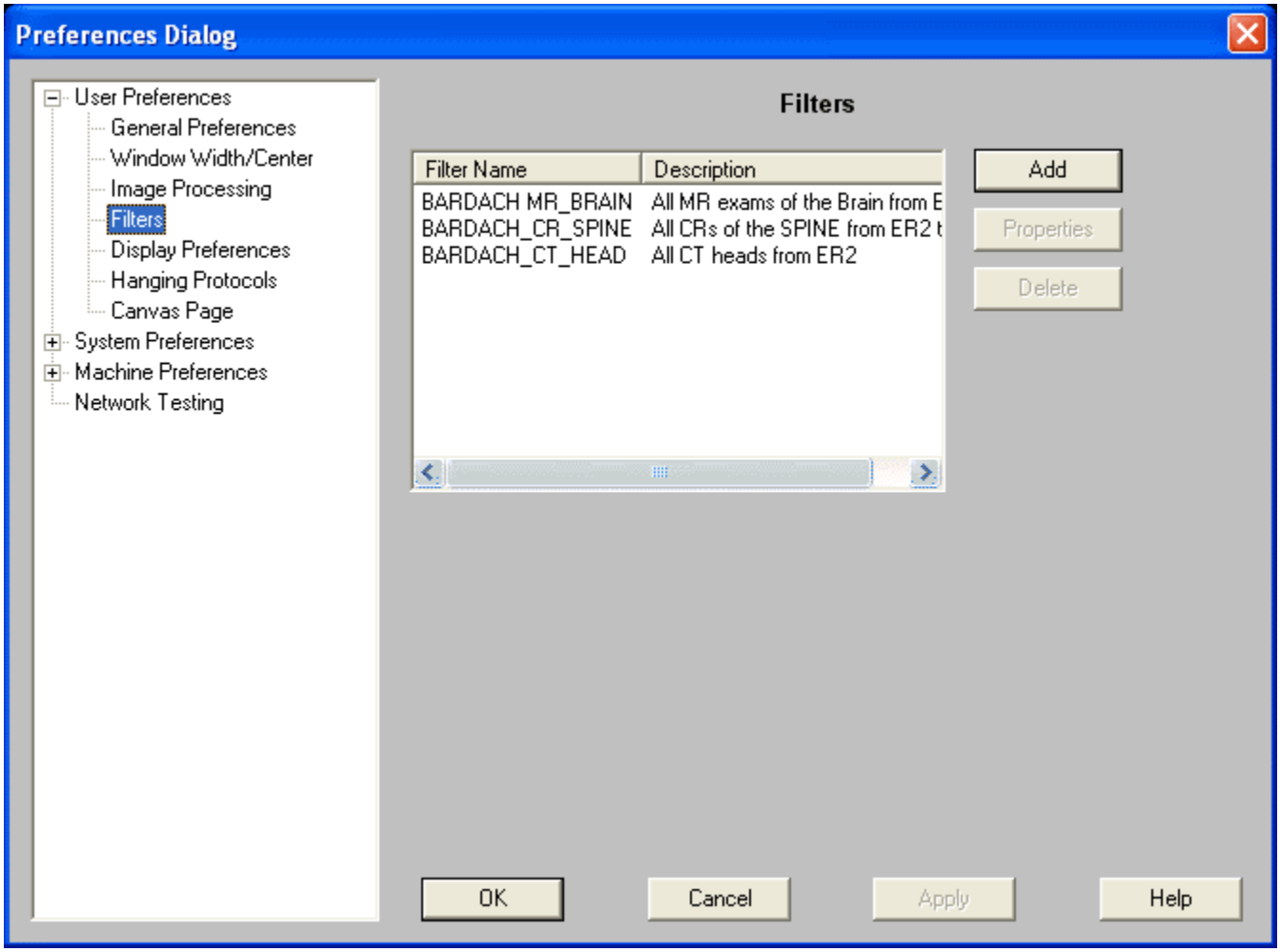
The four image processing options (Edge Enhance, Edge Detect, Median Filter and CLAHE) are listed.

Click each setting to see the current value and to make changes, as seen below.



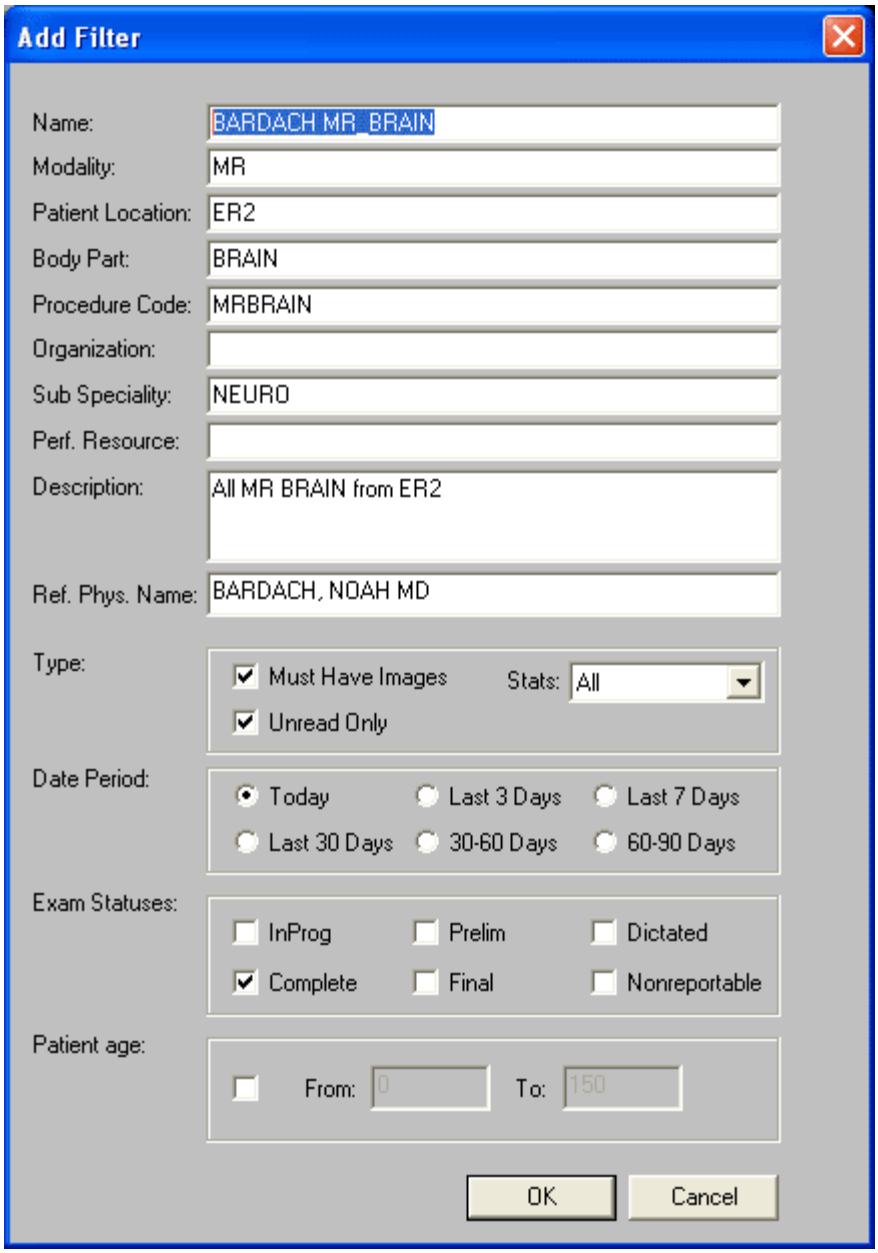
Detailed alterations to the method, degree and properties of each image processing option can be made in these menus. The CLAHE section has extensive preferences which include Contextual Region Dimension, Number of Bins, Clip Limit and Map Level.

Filter Preferences: The Filters area, seen below, contains information regarding all of the different filters that can be used to tailor your Reading Worklist to meet your specific needs. By creating a personalized filter, you can generate a worklist that will contain only the exams that meet your filter criteria. Please note, it is important that you exercise care in creating your filters, lest you accidentally exclude exams which you wish to reading.



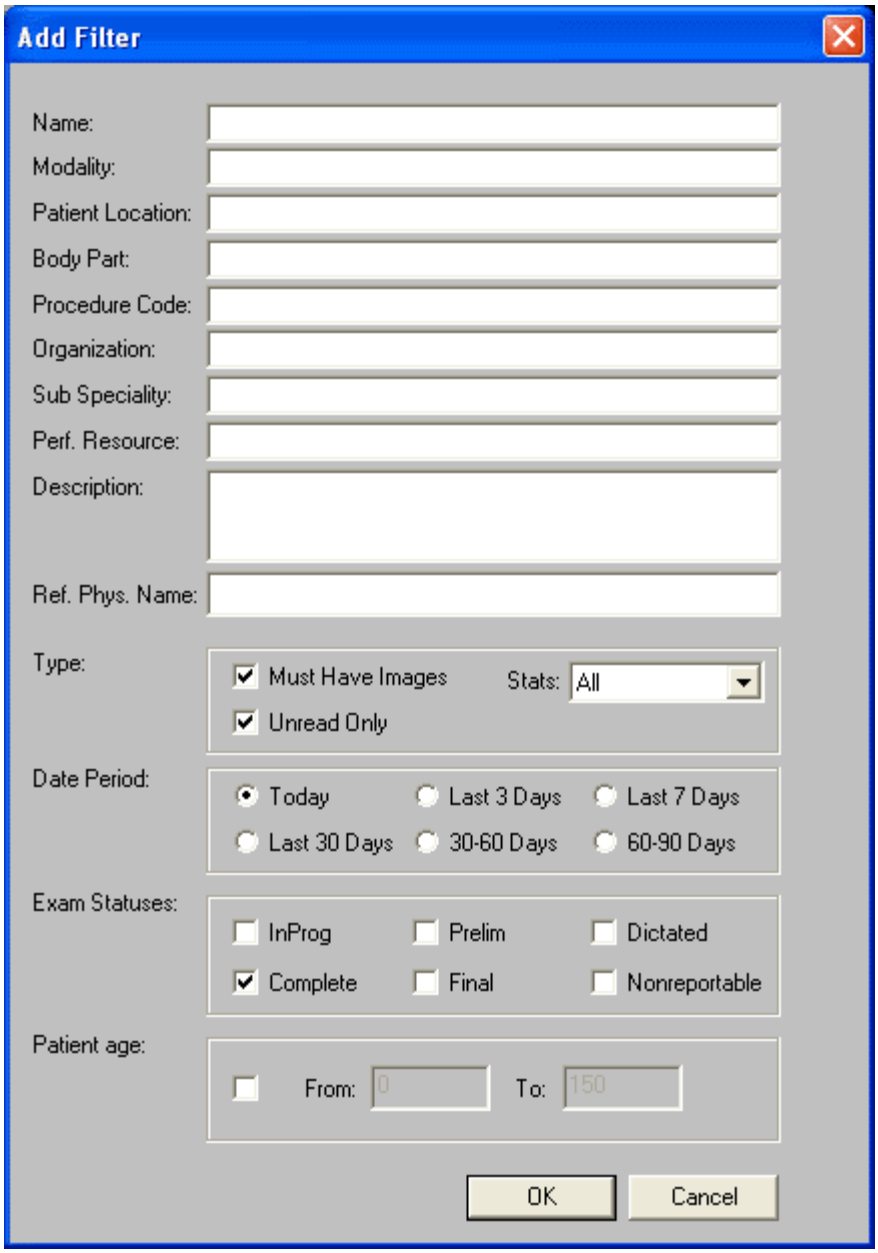
By using these filters, you can create a worklist that displays only those exams that you wish to read. For example, if you specialize in a particular body part, such as the head, and in a particular modality, such as MR, you can use and create filters to generate a worklist that will only contain MR Head exams. You can also create filters that will generate a list of exams only from one location in your organization, such as the ER or ICU. If you only wish to read exams from today, the last 3, 7 or 30 days, you can create a filter that will generate a list of exams only from your selected period.

To edit or view the properties of any one of the filters, highlight that filter using your mouse and click the "Properties" button. The following window will appear.

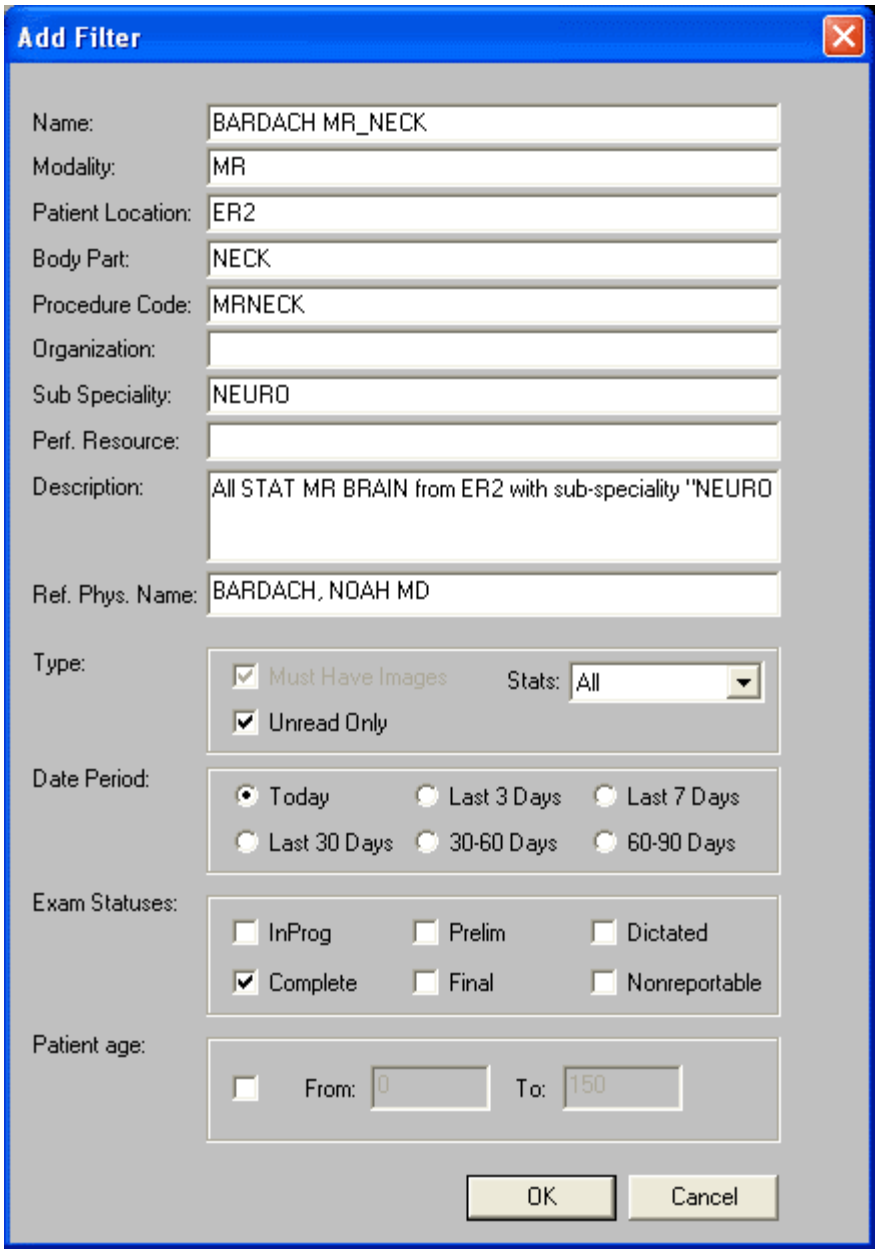


Make changes as desired by entering the appropriate information into the fields and selecting the appropriate buttons below. When you have finished, click the "OK" button. You will be returned to the Filter Preferences Tab. Please note that certain fields must be specified exactly. For example, if you wish to specify the organization "IH4/ac32.*j", you must specify the exact name. Any omissions or errors will result in a limited filter.

If you wish to create a new filter, click the "Add" button. A blank filter window, the "Add Filter Info" dialog, will appear, as shown below.



Specify all pertinent information to create the exact filter you desire, as shown below.



Listed below are the various fields and their significance. Please note that you do not have to fill in all the fields. The default for an empty field is "all". For example, leaving the Patient Location field blank would search for all Patient Locations.

- **Name:** This is the display name of the filter.
- **Modality:** Enter the Modality codes (ex: MR, US, CT, etc.) that you want the filter to search for. If you leave this field blank, the filter will search all modalities.
- **Patient Location:** Enter the location of exams that you want the filter to search for.
- **Body Part:** Enter the Body Part code or identifier (ex: Abdomen or ABD) of anatomy that you wish the filter to search for.

- **Procedure Code:** Enter the procedure code (ex: CTABD) for exams that you wish the filter to search for.

- **Organization:** If your institution is broken up into separate organizations, enter the name of the organization you wish the filter to search for.

- **Sub Specialty:** Enter an exam sub specialty (ex: Neuro, Ortho, etc.) for exams you wish the filter to search for.

- **Description:** Enter a description for the filter you are creating.

- **Ref. Phys. Name:** Enter the name of the Referring Physician who's patients you wish the filter to search for using the following guidelines
    - Search on the Last Name of the referring physician.
        - For example: <Doe>.
    - Search on partial Last Name of the referring physician.
        - For example: <Do*>.
        - The "*" symbol represents a wildcard in this case and will allows you to match on all last names that start out with "Do".
    - Search on Last Name, First Name.
        - For example: <Doe, John>
        - The "," symbol is used to separate the Last Name from the First Name
    - Search for multiple referring physicians
        - For example: <Doe, John; Smith, Ken> or <Doe; Smith>
        - The ";" symbol is used to separate the names from each other
        - It is not possible to use the "*" wildcard when searching for multiple referring physicians
        - It is not possible to search for multiple physicians using a Last + First Name for one and only a Last Name for another one.

- **Type:** Use the "Stats" pull-down menu to indicate how Stat exams should be included in your search. If you only want the filter to search for exams with images, check the "Must Have Images" checkbox and if you wish to exclude exams that have already been read, check the "Unread Only" option.

- **Date Period:** These options limit the chronological scope of the filtered search.

- **Exam Statuses:** These options limit the scope of the filter to certain Exam Statuses.

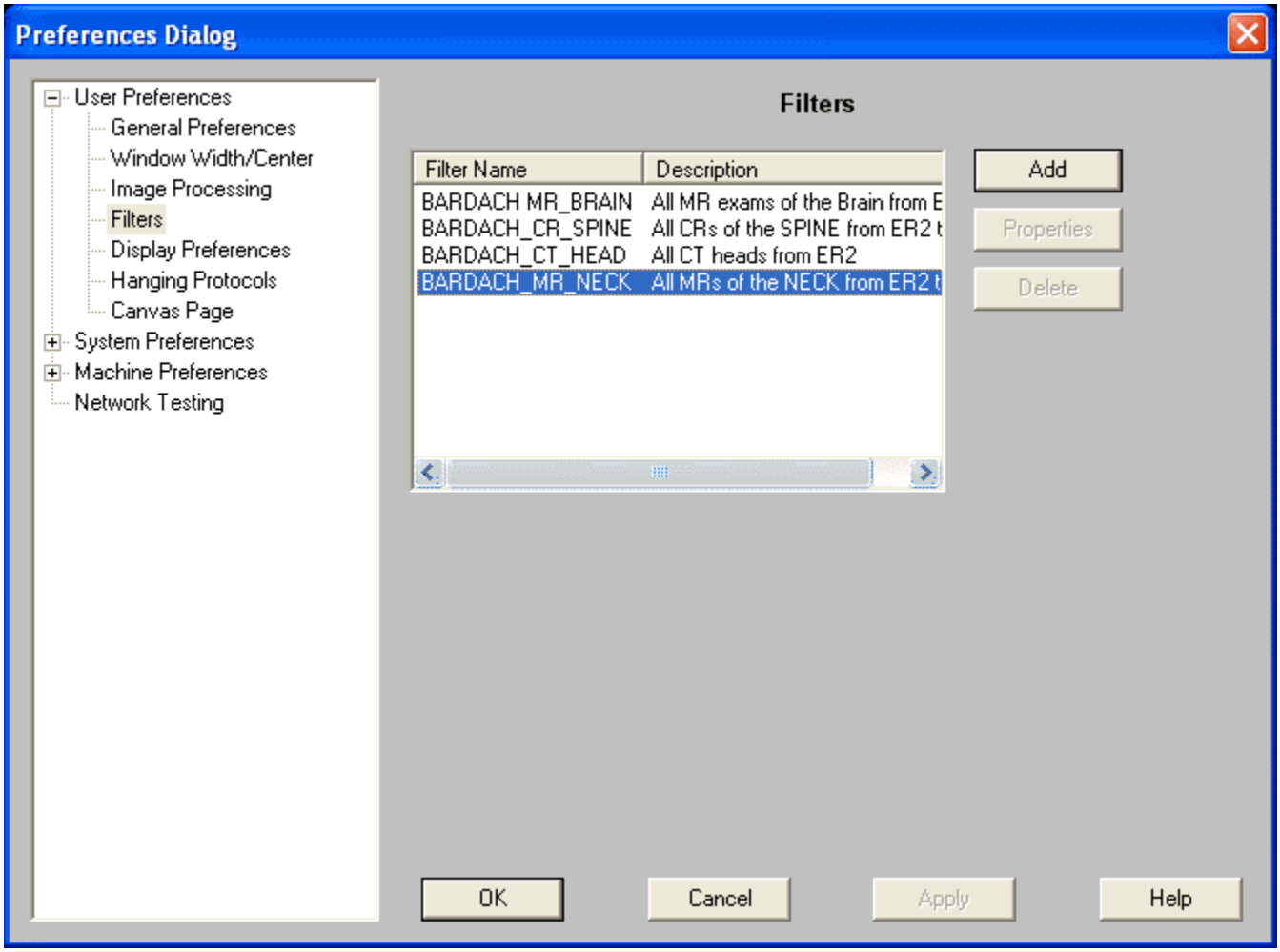
- **Patient Age:** This option limits the scope of the filter to patients of a certain age. If you wish to limit the results of the filter based on the patient's age, check the box and enter an age range.

- **Performing Resource:** This option limits the scope of the filter to exams coming from a particular performing resource or multiple performing resources. Add the exact name of the performing resource. If you wish to limit the filter to multiple performing resources, enter their names separated by commas.

Name your filter in the "Name" field and then fill the dialogue in with the necessary information making sure that the filter is unique and also functional. Please note that you do not have to fill in all the fields. Note also that if the Modality field is left blank, the filter will apply to all available modalities. Only the Modality field has this characteristic.

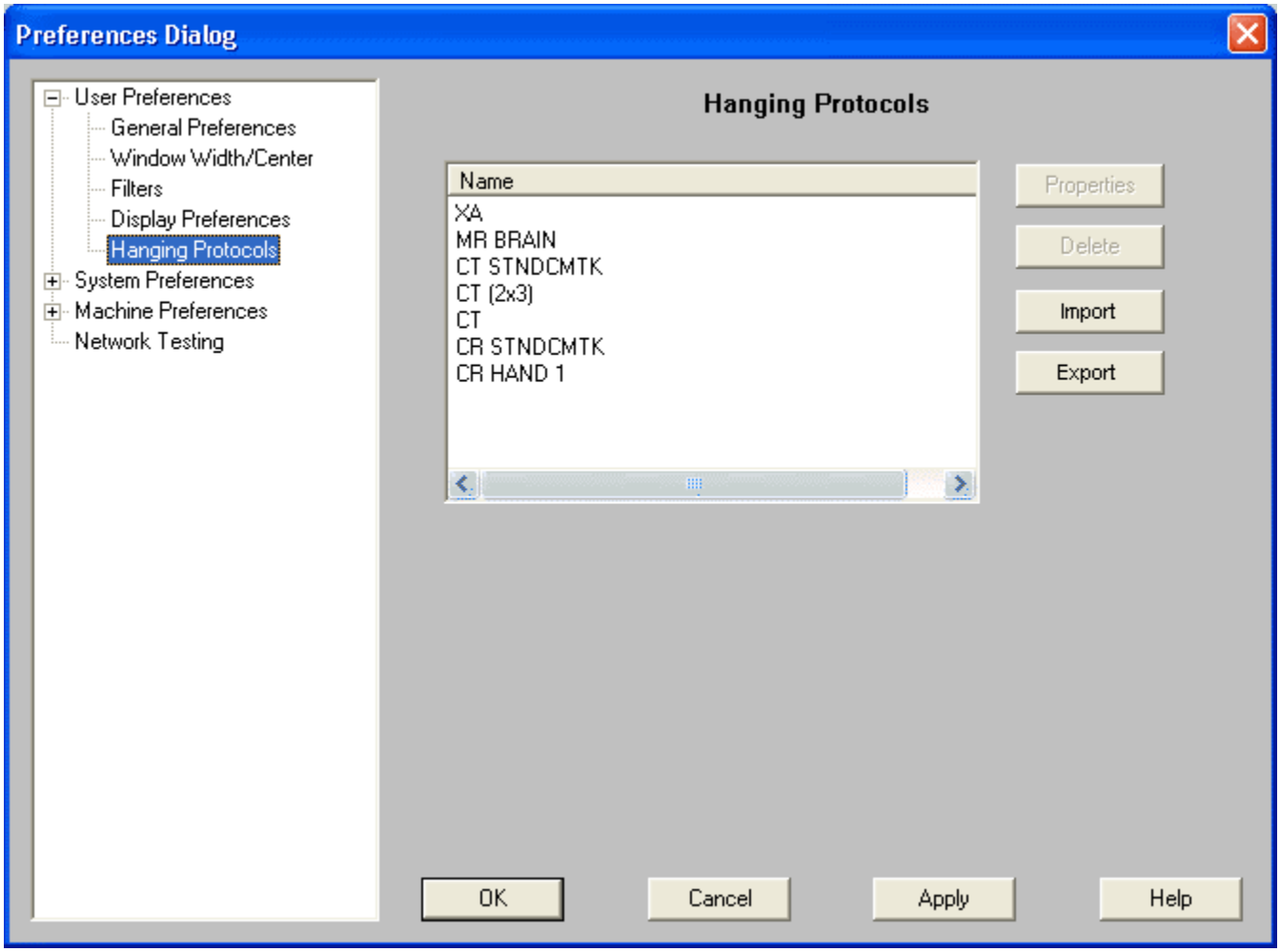
Special care must be taken with the generation of a filter. When completing in the fields, you must use your institution's standard codes and syntax. For example, if your institution's code for the Emergency Room is "ERC" then you must use "ERC" to specify the Emergency Room. If you enter "ER", "Emergency" or any other code, the filter will not work. For example, if you wish to create a filter that isolates exams with a description of a particular ailment or symptom, the language in your filter must match the description exactly or the filter will fail. If you enter "High blood pressure" in the description field but your institution uses the code "HBP" as standard notation, your filter will fail. In that instance, you would have to enter "HBP" in the description field.

Once you have finished specifying the filter criteria, click "OK". The new filter will be displayed along with the pre-existing ones. You can create up to 100 system filters.

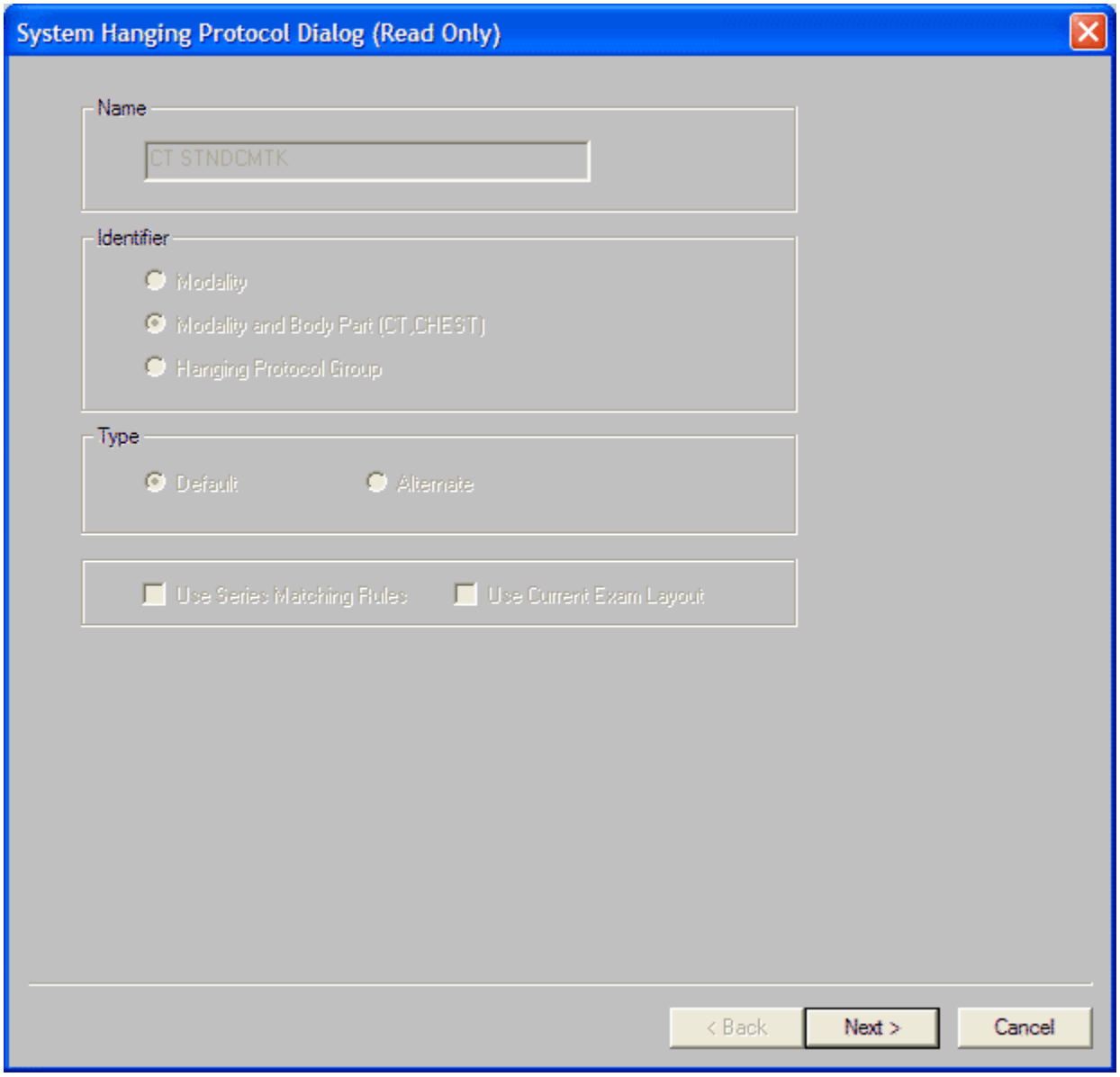


If you have finished reviewing and/or editing your personal preferences, click the "OK" button. You will be returned to the program.

Hanging Protocol Preferences: Hanging Protocols are created and edited from within the iSite Radiology Canvas Page. The hanging protocol preferences area allows you to view the iSite Radiology Hanging Protocols and to delete them if necessary. To access the Hanging Protocol Preferences, click the listing, as shown below.



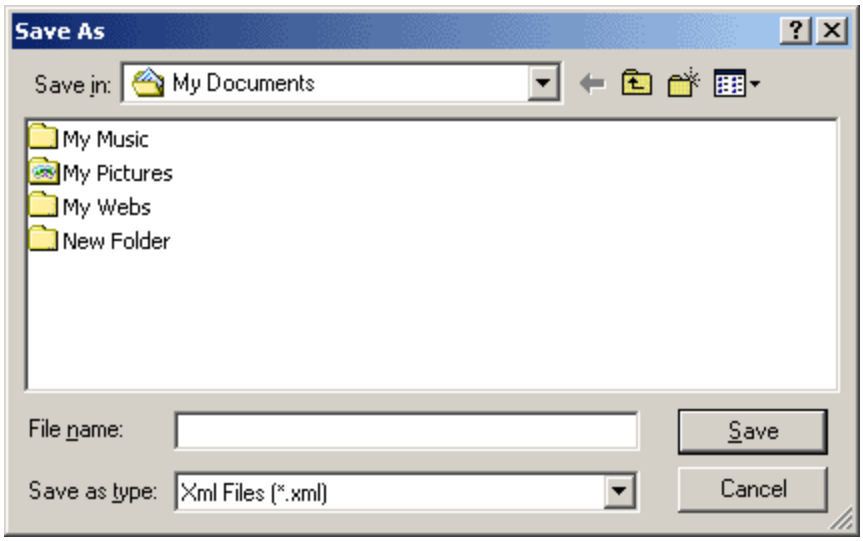
To view the properties of a hanging protocol, highlight the appropriate Hanging Protocol and click the "Properties" button. The following window will be displayed.



By clicking the "Next>" button you can visit all of the subsequent windows of the Hanging Protocol properties. All of these windows are Read Only and cannot be edited from the Preferences page. Hanging Protocols must be edited from within the iSite Radiology canvas page.

To delete a Hanging Protocol from the system, highlight that Protocol's listing and click the "Delete" button.

If you wish to export a Hanging Protocol listing, select the desired Hanging Protocol and click the "Export" button. The following dialog will appear.



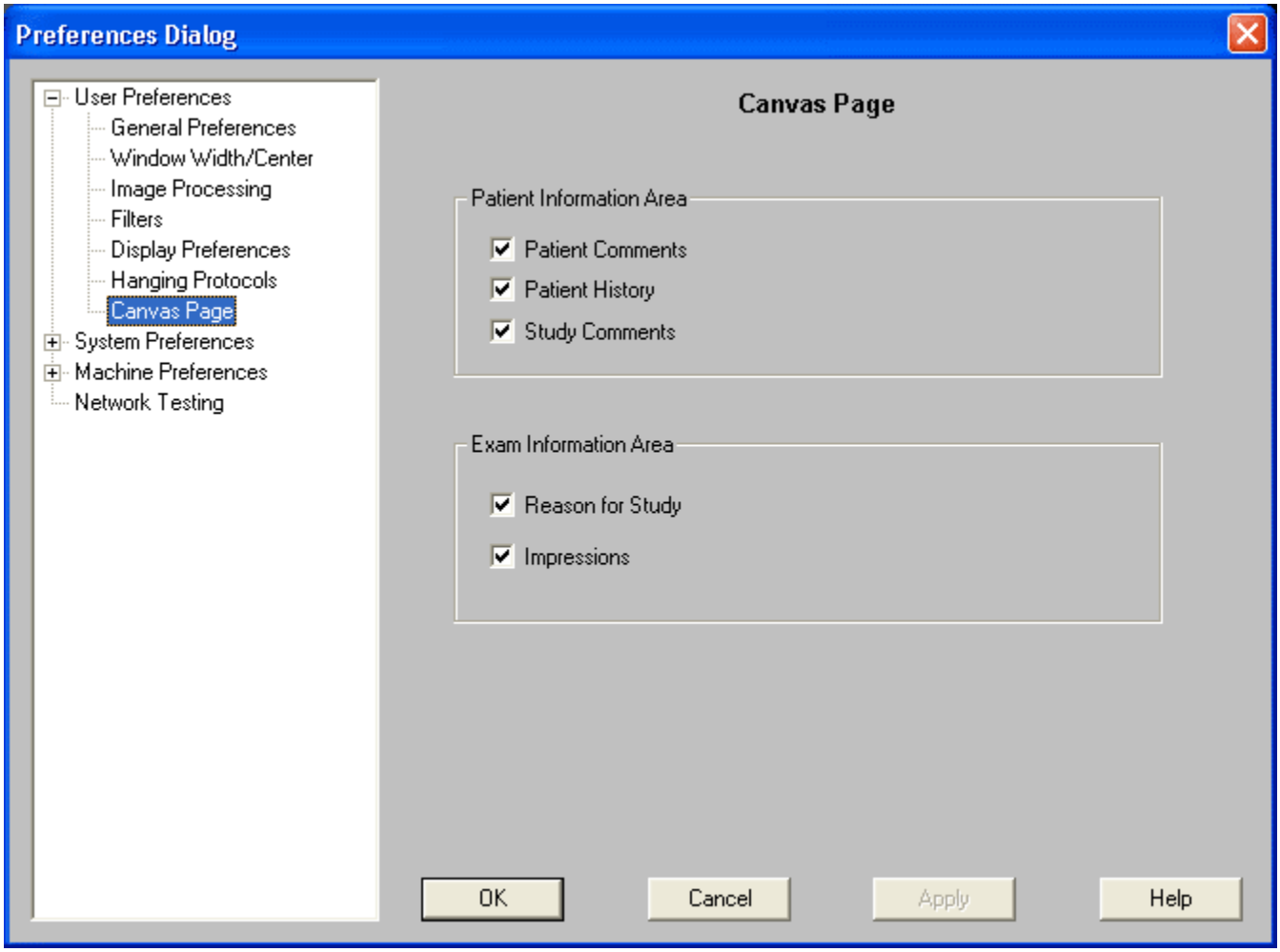
Choose a name for the exported file and click the "Save" button. The file will be saved in .xml format in the chosen directory.

If you wish to import Hanging Protocol listings, click the "Import" button. Choose the desired .xml format file and click the "Open" button.

Please note that if you import a Hanging Protocol that has the same name as an existing Hanging Protocol on the system, you will be prompted to rename the imported Hanging Protocol. Imported Hanging Protocols will always be listed as "Alternate".

If you have finished reviewing and/or editing your personal preferences, click the "OK" button. You will be returned to the program.

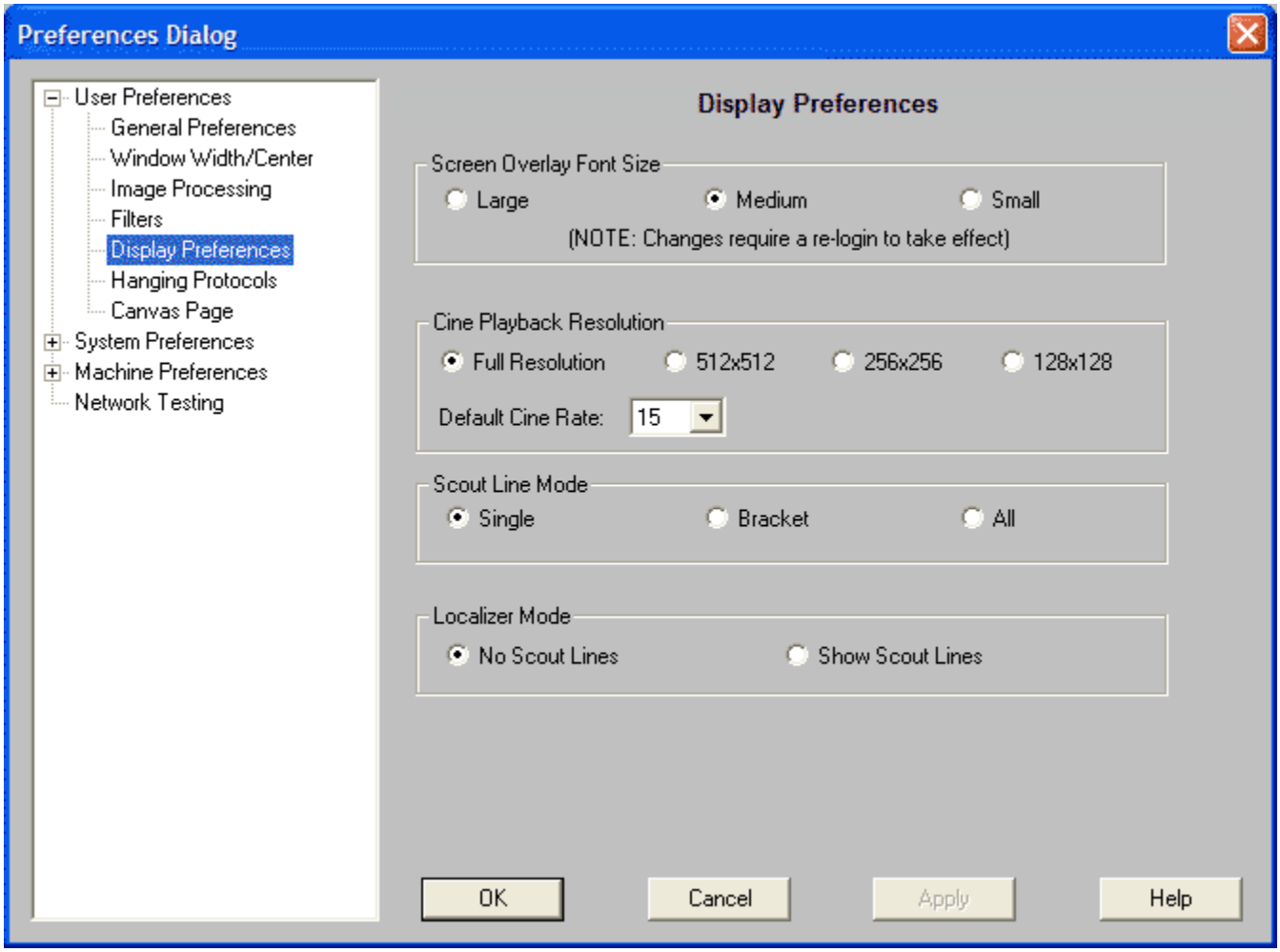
Canvas Page Options: You can specify information displayed in the iSite Radiology Canvas Page in the Canvas Page options. To access these options, click the "Canvas Page" listing at left, as seen below.



Check the boxes of the information that you wish to display in the Patient Information Are and the Exam Information Area.

If you wish to continue editing your preferences, click the "Apply" button. Your changes will be saved. If have finished reviewing and/or editing your personal preferences, click the "OK" button. You will be returned to the program.

Display Preferences: You can specify many elements of how images are displayed on your monitors in the Display Preferences. To access these options, click the "Display Preferences" listing, as seen below.

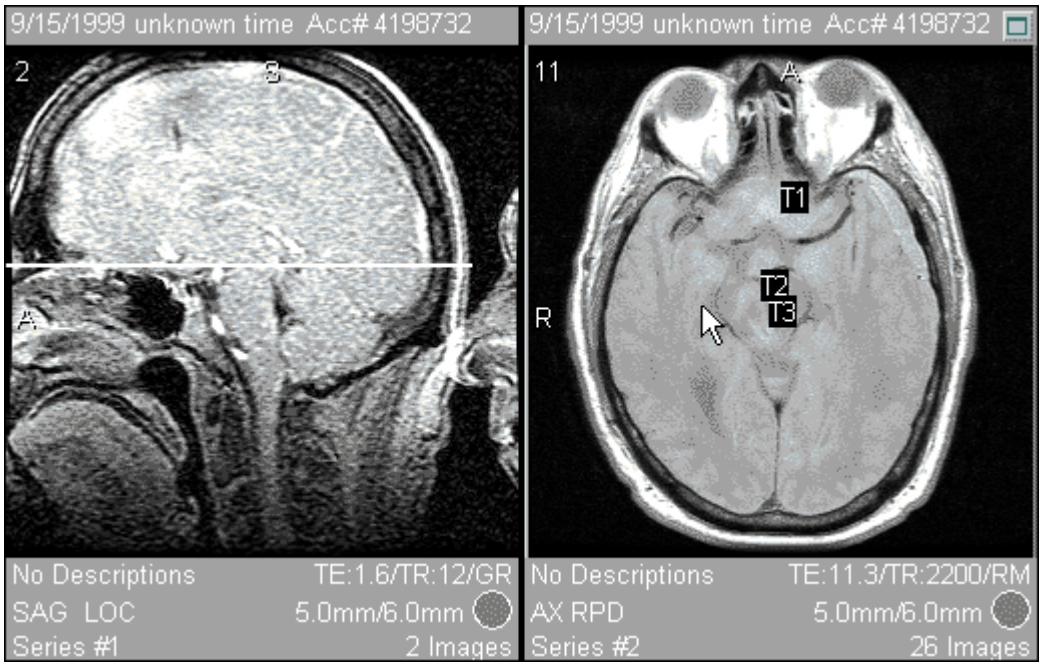


The font size of the Screen Overlays that are displayed on diagnostic images can be set in the "Screen Overlay Font Size" area. After making changes, you must logout of the program and login again to activate the new font size.

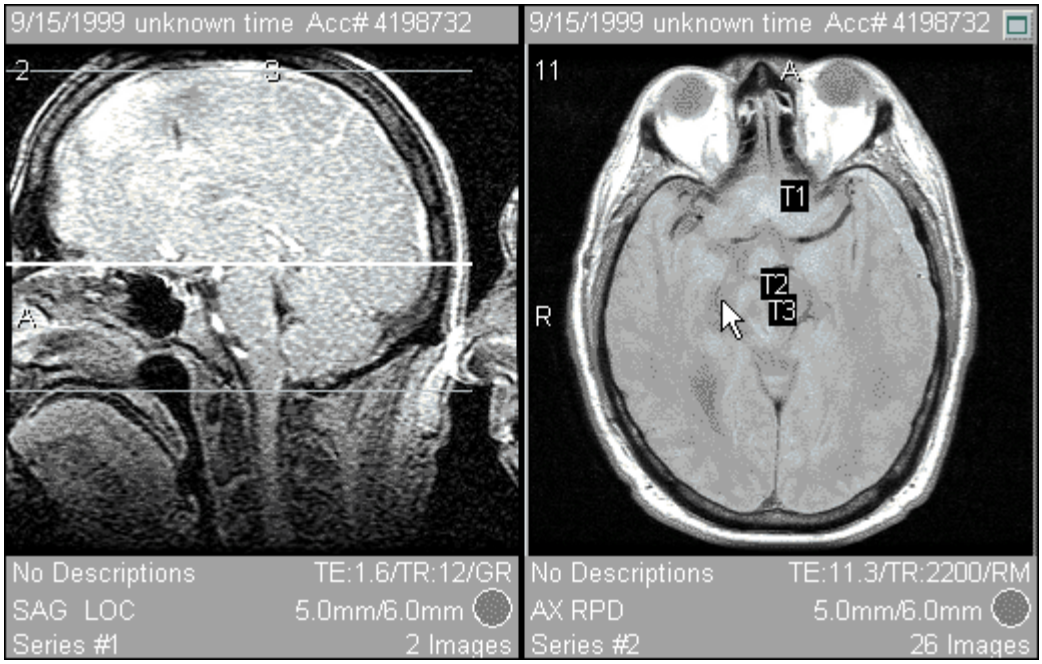
The image playback resolution (not the window) of a Stacked Image Window displayed in cine is set in the "Cine Playback Resolution." For example, a cine clip captured at a resolution of 1024 x 1024 can be played back at a resolution of 256 x 256. The result is that the clip is loaded faster because there is less data retrieved from the server, but the quality will be lower. The user has the ability to improve the image quality on the fly by pressing the <F9> hot-key. (Note: The Popup Window Size is independent from the image resolution, for example in the use case just described the initial Window Size might by 512 x 512. If the clip is displayed at 256 x 256 it will be stretched to fit the window size, after pressing <F9> it will retrieve the additional image information to improve image quality to full fidelity for that window size, which is 512 x 512. The Default Cine Rate drop-down menu lets you chose a default frames per second playback rate between 1 and 45. This Default Cine Rate will be applied only when images don't have the DICOM 'Recommended Cine Rate' (tag 00082144) or DICOM 'Cine Rate' tag (00180040) specified in their metadata sent from the modality.

In the "Scout Line Mode" area, you can determine which of the following scout line displays will be employed:

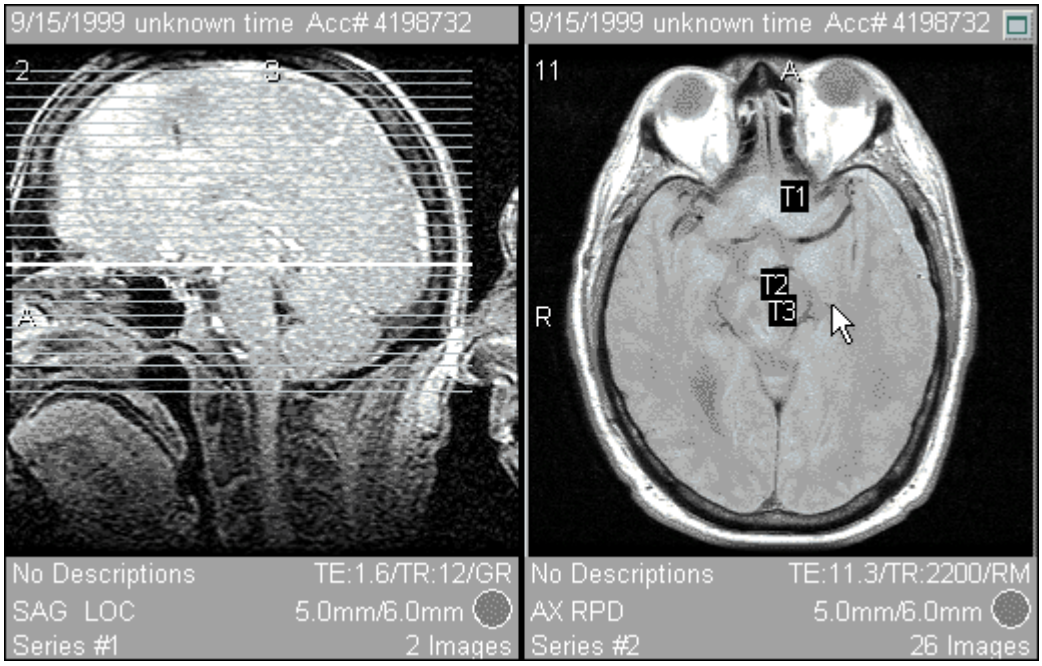
- Single: a single scout line, showing the location of the slice being reviewed.



- Bracket: a single scout line, showing the location of the slice being reviewed, as well as two lines showing the limits of the series being reviewed.



- All: a single scout line, as well as a line for every slice in the series being reviewed, as seen below.



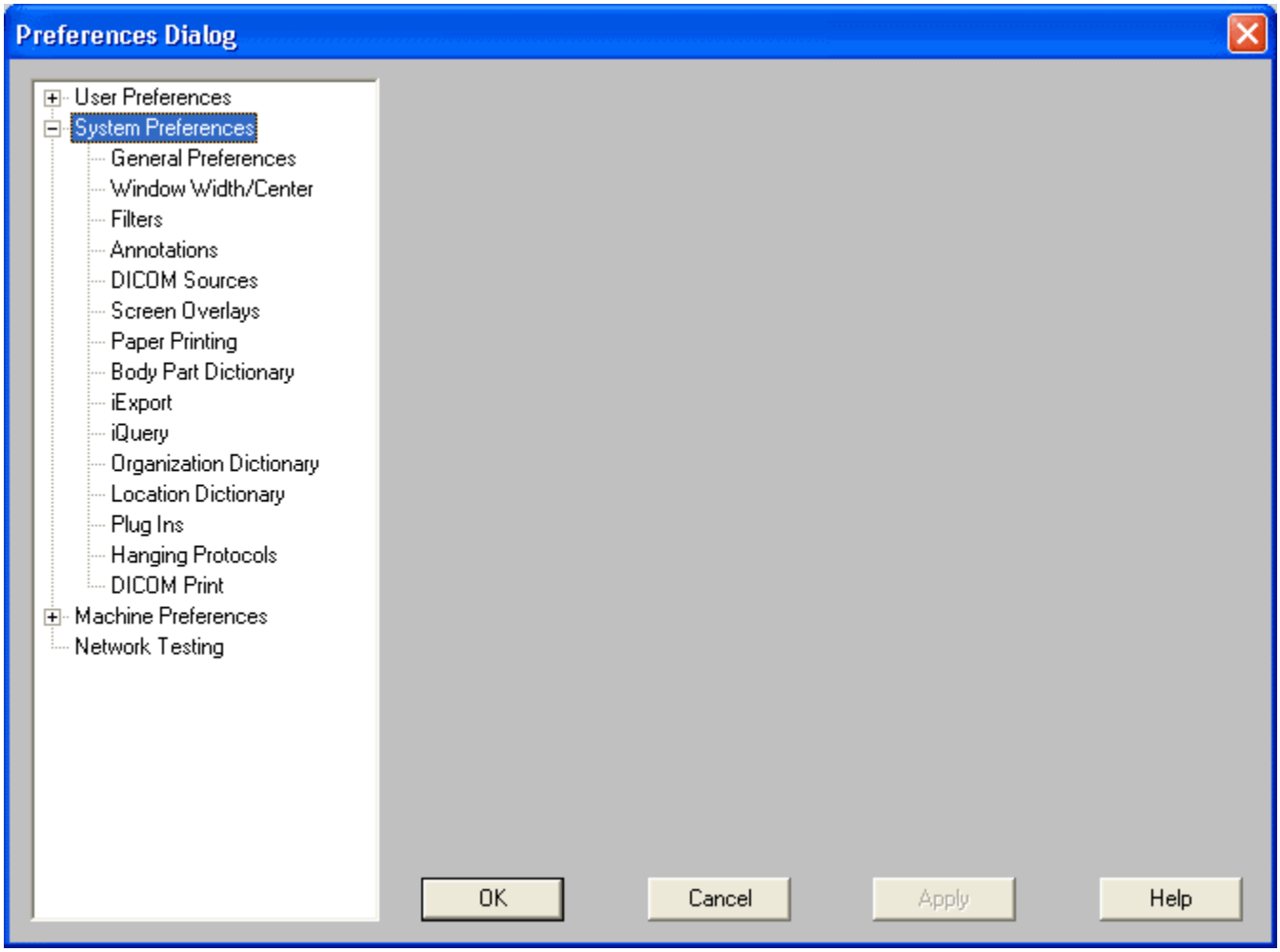
In the "Localizer Mode" option, you can set whether or not scout lines are displayed when the Localizer is active and the image is left-clicked.

Set the options as desired and then click "Apply" to generate changes in the system.

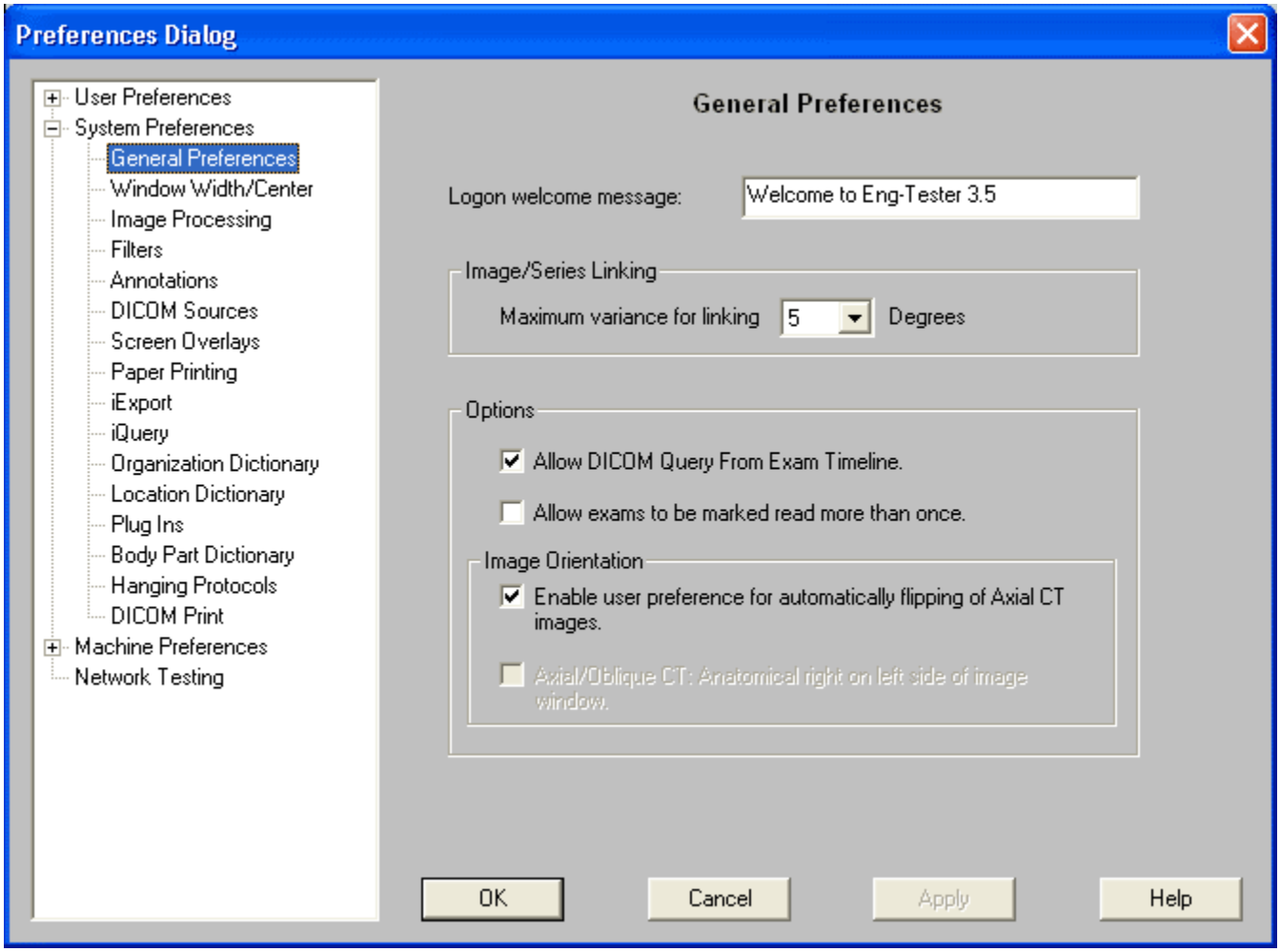
System-wide Preferences

Please note that the preferences listed below are only available to administrators. They are not visible to users who do not have administrative privileges.

Access iSite Radiology's set of system-wide preferences by clicking the plus symbol next to the "System Preferences" item in the tree view control at left. The menu will expand, as seen below.



General Preferences: The system-wide General Preferences are seen below.



There are three sections to the General System Preferences. The "Logon welcome message" allows you to set a greeting for the iSite Login Screen. In the image above it reads "Welcome to iSite 3.5."

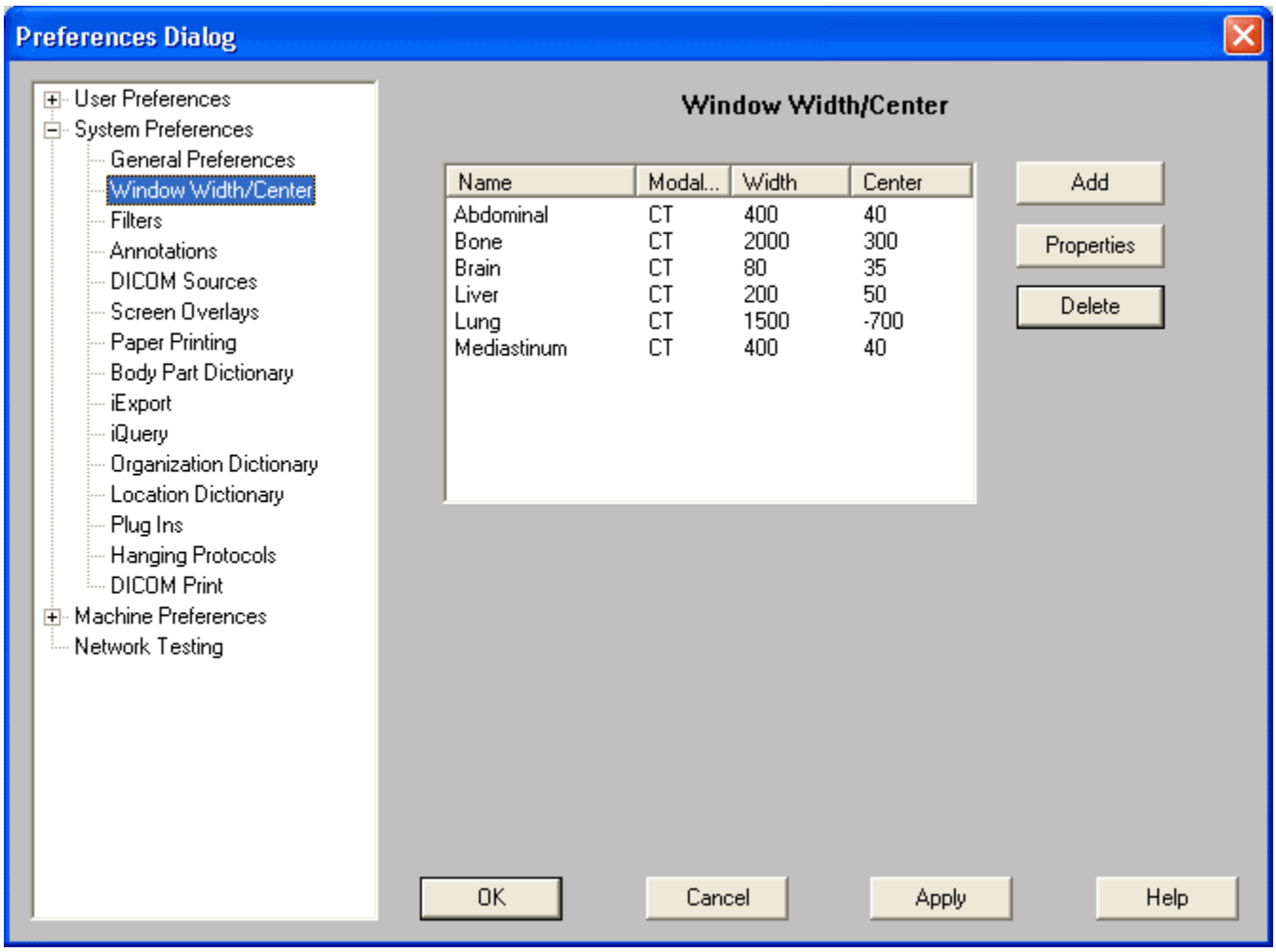
In the Image/Series Linking section, you can set the number of degrees to allow for linking variance. This feature is used to set the variance (=degree) iSite uses to determine if a Series can be linked with another series. This feature is primarily used to link Oblique Series that are 5%-15% of the Axial Plane with Axial Series. In iSite 3.2.x the variance was fixed to 5 degrees. In iSite 3.3, the variance is configurable at a site level and could be increased to 25 degrees. iSite 3.5 has increased the maximum variance to 40 degrees.

The "Options" section of this dialog provides the following configurations:

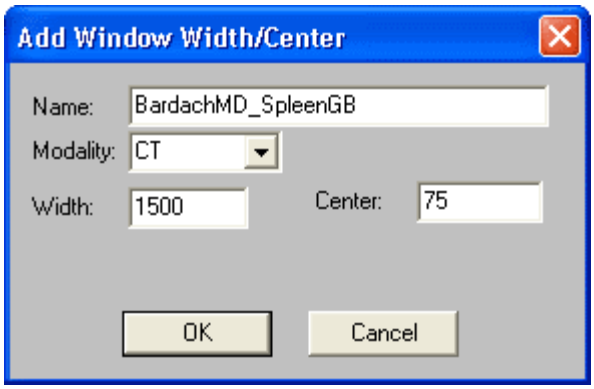
- Allow DICOM Query...: Permits users to perform a DICOM query from the Exam Timeline.
- Allow exams to be marked...: Permits users to mark an exam "Read" more than once (iSite Radiology only)

- Image Orientation Options: These two options allow the administrator to decide whether individual users should be able to set their own flipping preferences for Axial CTs or whether Axial and Oblique CTs should always be displayed with the anatomical right on the left side of the image.

Window Width/Center: This section of the system-wide preferences can be accessed by clicking the "Window Width/Center" item in the tree view control at left. The following options will be displayed:

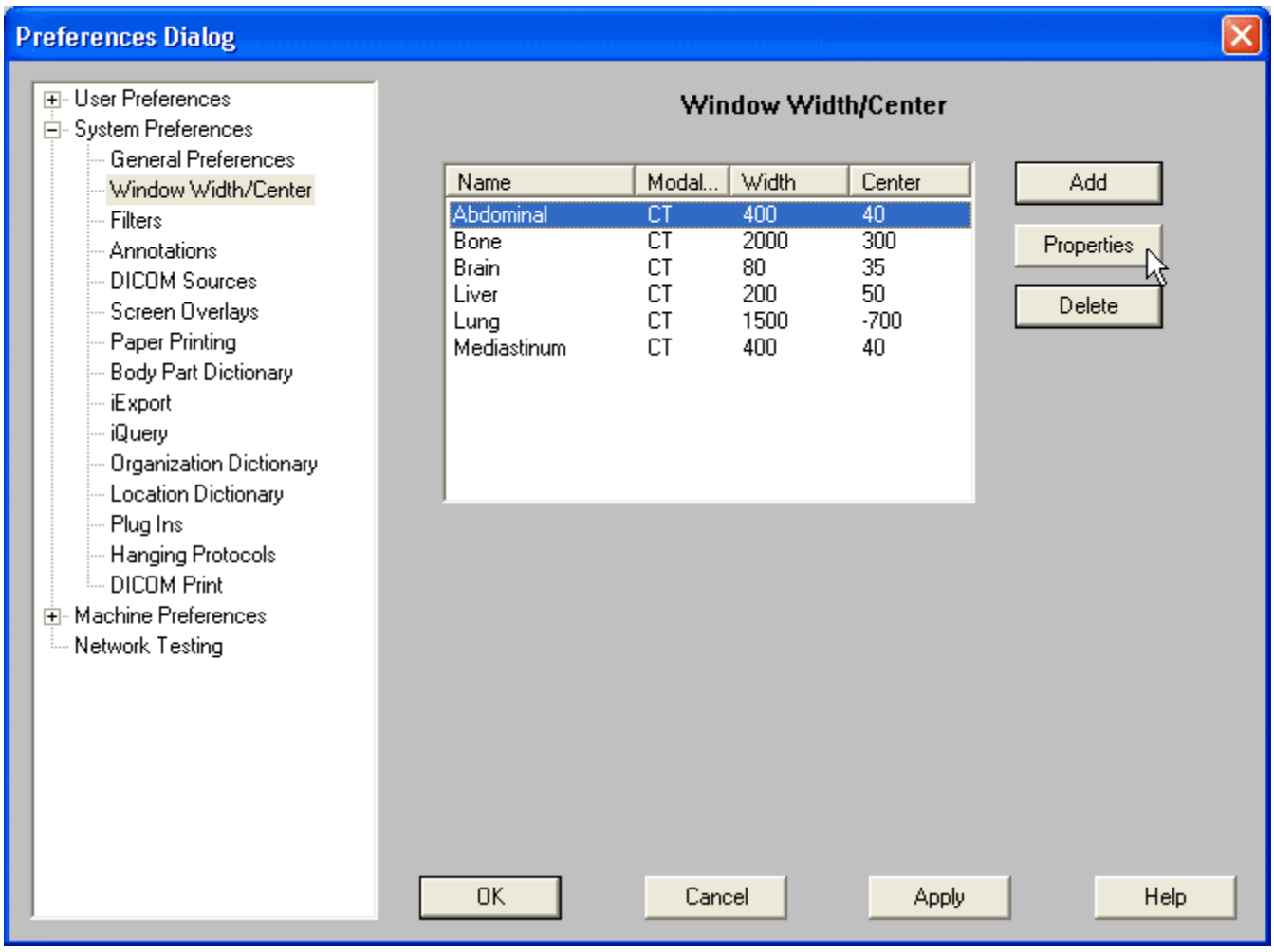


This window displays the various default window width and center values for iSite. This list can be appended with new items by clicking the "Add" button and specifying the window with and center. For example, you could create a custom window width and center setting by clicking the "Add" button, specifying a name and filling in the window width and center values, as seen below.

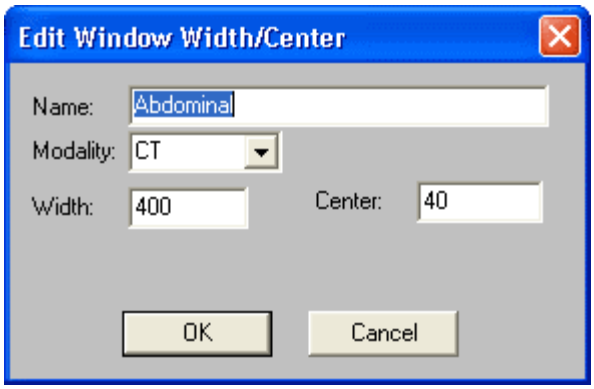


Having clicked the "OK" button to save your changes, the new custom window width and center setting will be displayed in the list.

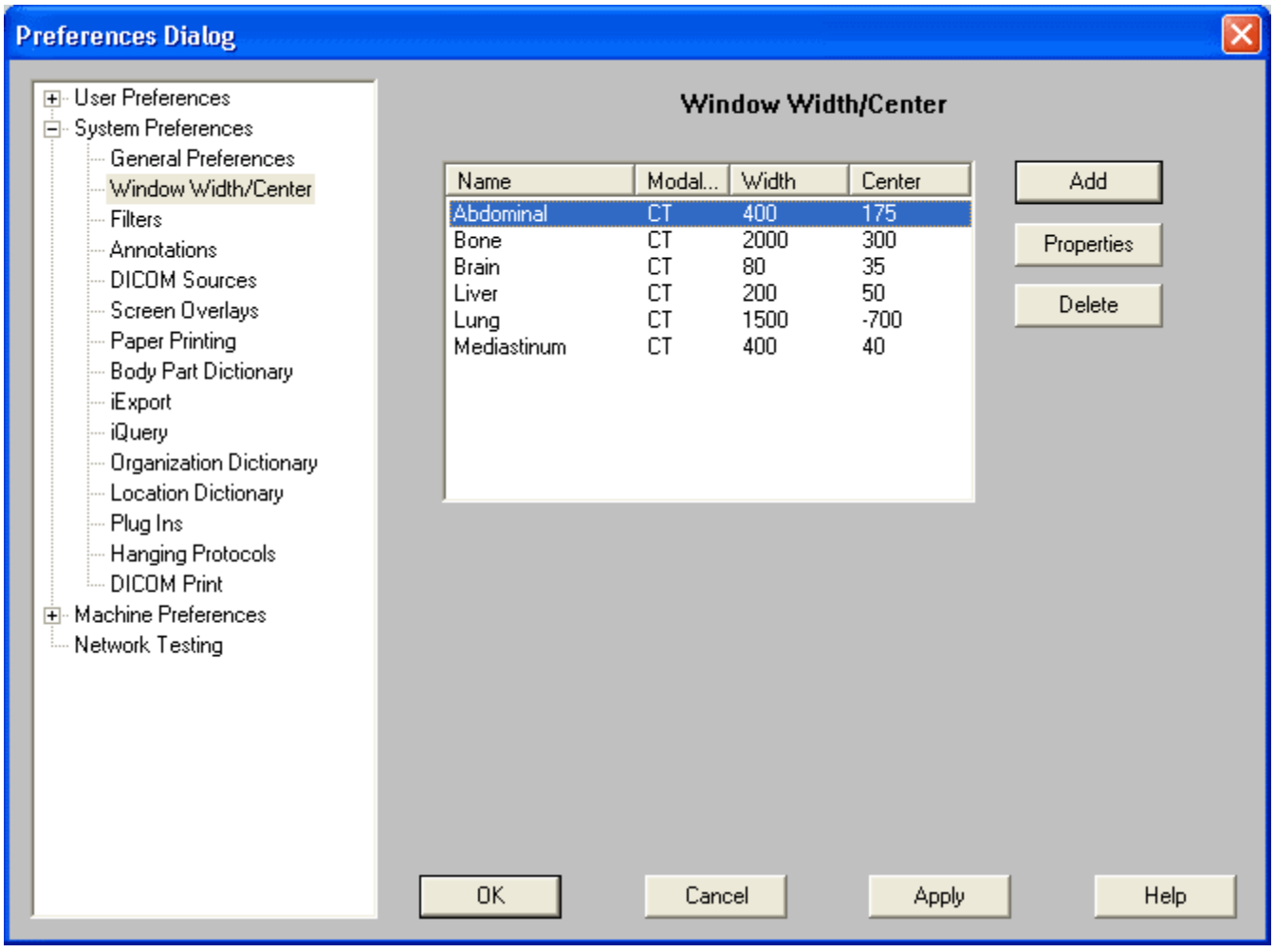
To edit a window width and center setting, highlight that listing and click the "Properties" button as seen below.



The Edit Window Width/Center window will appear. Make changes as necessary and click the "OK" button as seen below.

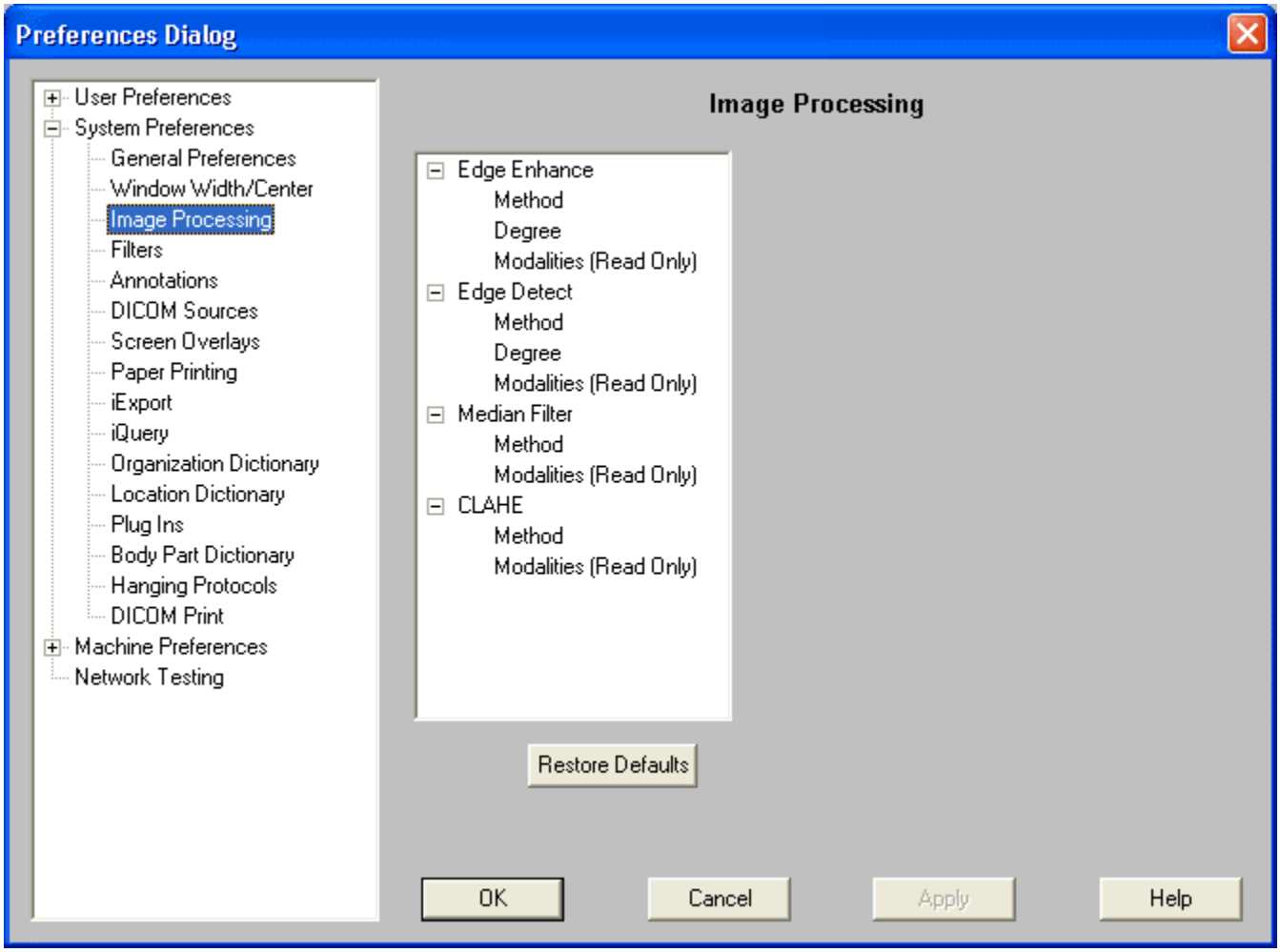


Upon returning to the Preferences Dialog, your changes will be visible in the settings list, as seen below.

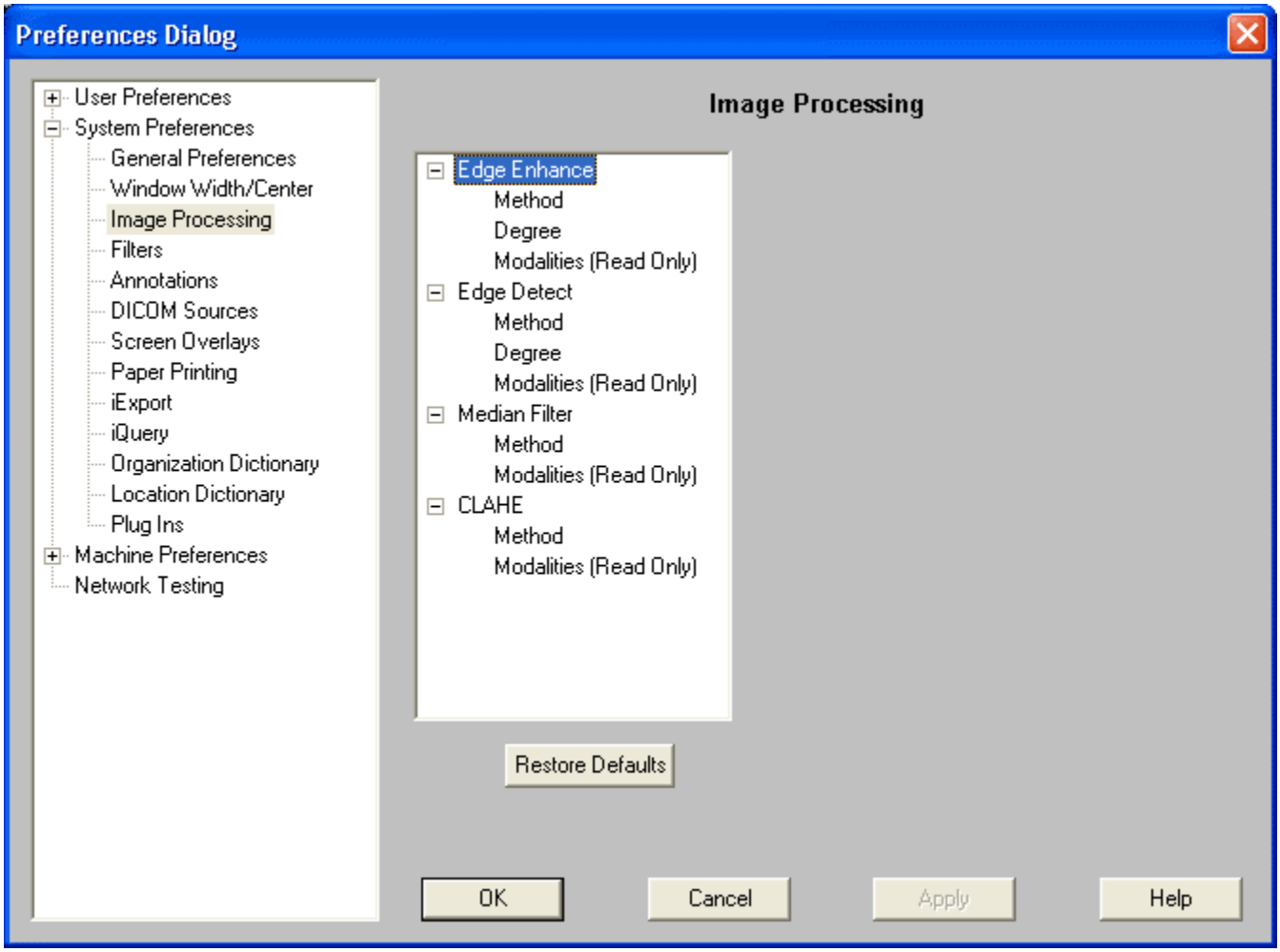


Items can be removed from the window width and center settings list by highlighting the item you wish to remove and clicking the "Delete" button.

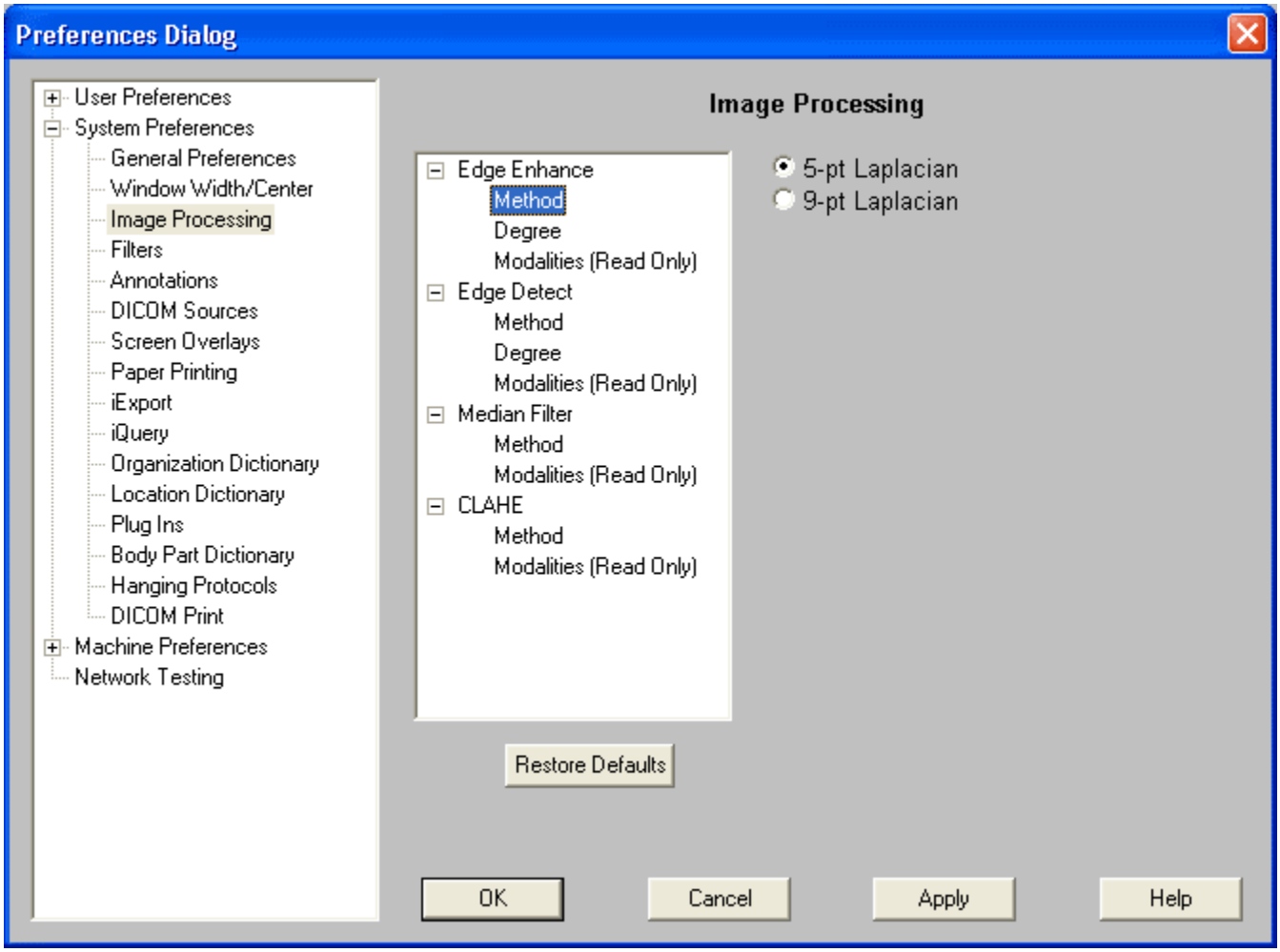
Image Processing: To access the settings for iSite's Image Processing features, click the "Image Processing" listing, as seen below.



The four image processing options (Edge Enhance, Edge Detect, Median Filter and CLAHE) are automatically expanded.

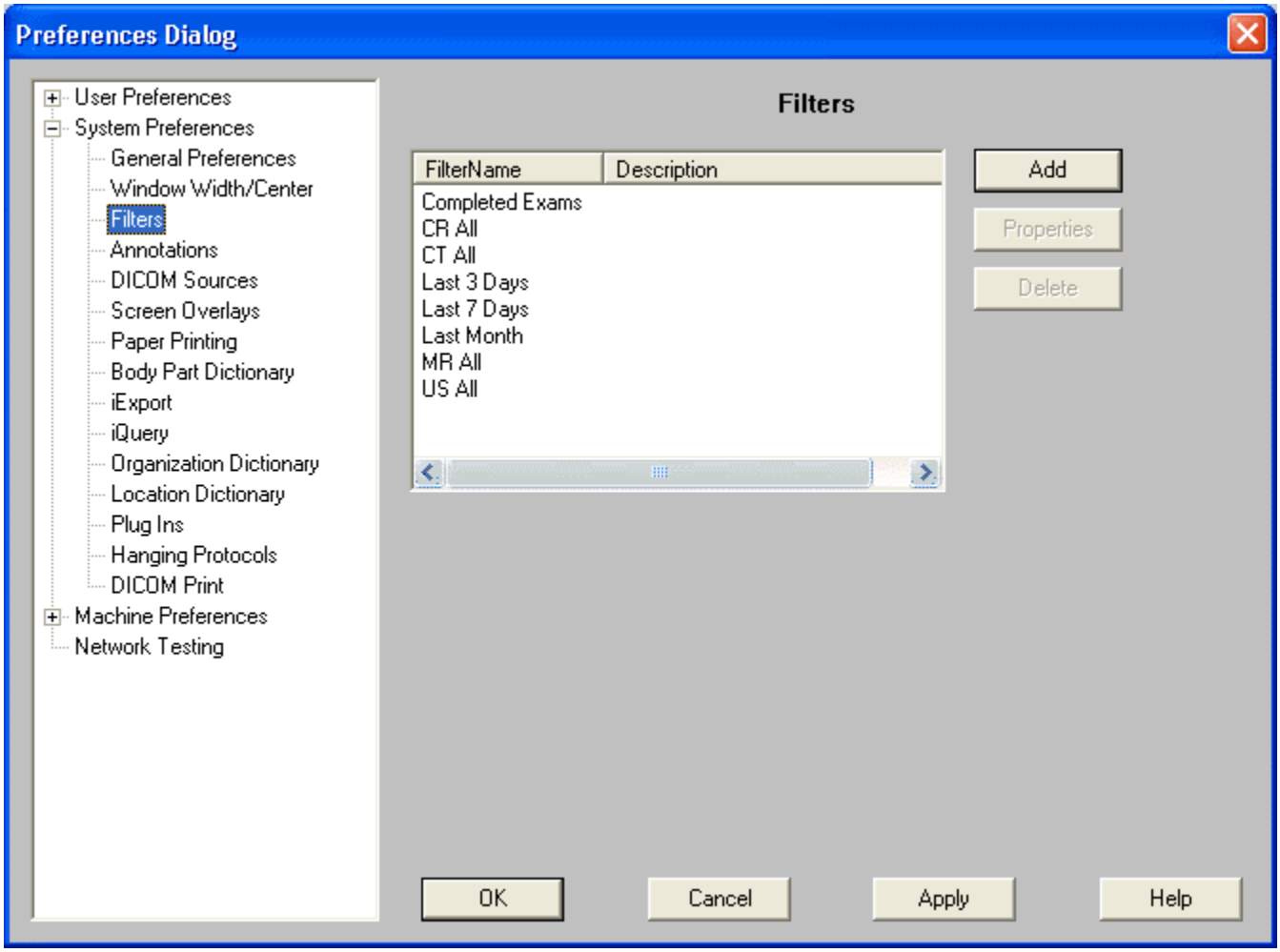


Click each setting to see the current value and to make changes, as seen below.

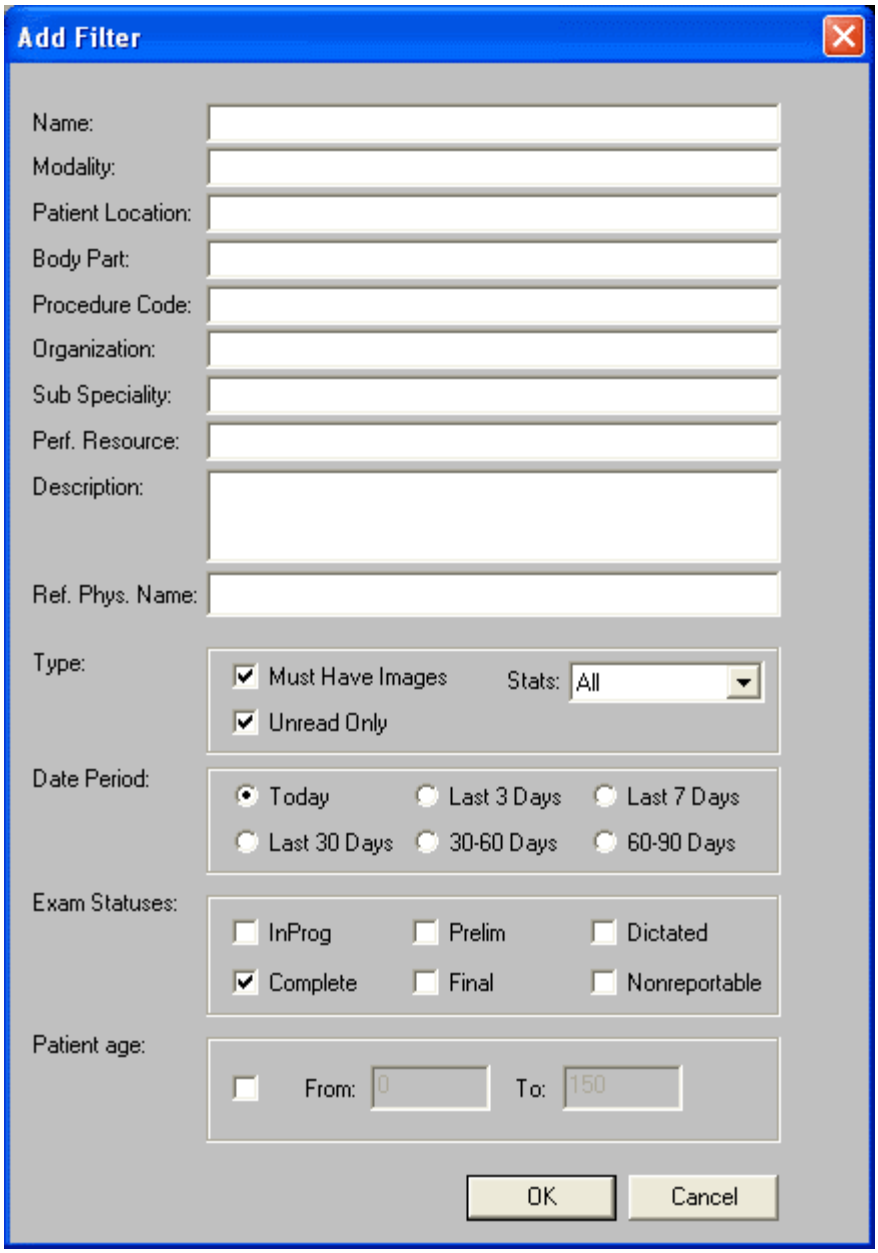


Detailed alterations to the method, degree and properties of each image processing option can be made in these menus, except for the "Modalities" sections, which are "Read Only". The CLAHE section has extensive preferences which include Contextual Region Dimension, Number of Bins, Clip Limit and Map Level.

Filters: To access the next page of system-wide preferences, click the "Filters" item in the tree view control at left, as seen below.



This page displays all of the various filters that can be employed when generating patient and modality worklists. As in the Window Width/Center page, new items can be created or existing items can be edited and/or removed. To add a new item, click the "Add" button. The following dialogue will appear:



Listed below are the various fields and their significance. Please note that you do not have to fill in all the fields. The default for an empty field is "all". For example, leaving the Patient Location field blank would search for all Patient Locations.

- **Name:** This is the display name of the filter.
- **Modality:** Enter the Modality codes (ex: MR, US, CT, etc.) that you want the filter to search for. If you leave this field blank, the filter will search all modalities.
- **Patient Location:** Enter the location of exams that you want the filter to search for.
- **Body Part:** Enter the Body Part code or identifier (ex: Abdomen or ABD) of anatomy that you wish the filter to search for.

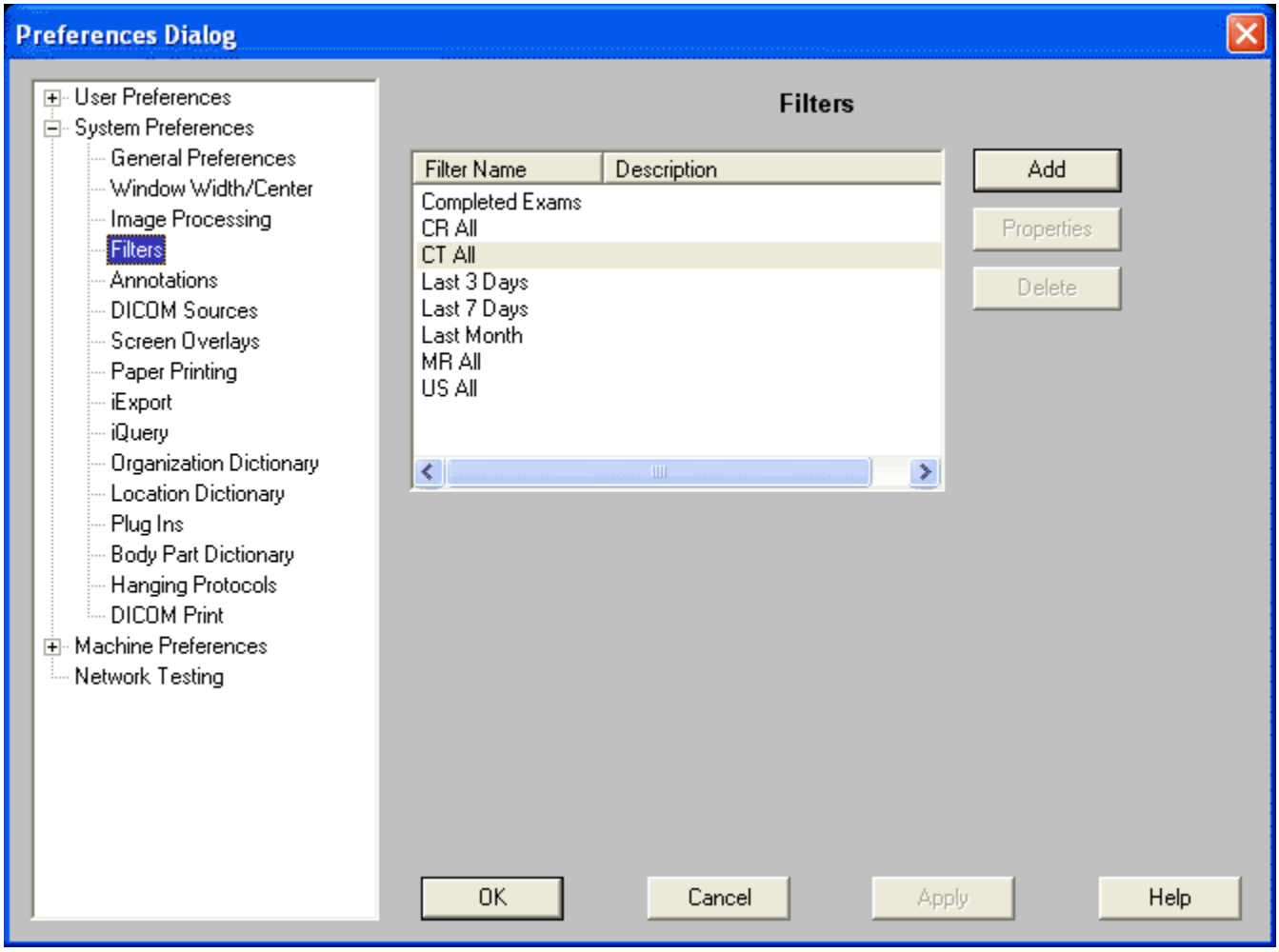
- **Procedure Code:** Enter the procedure code (ex: CTABD) for exams that you wish the filter to search for.
- **Organization:** If your institution is broken up into separate organizations, enter the name of the organization you wish the filter to search for.
- **Sub Specialty:** Enter an exam sub specialty (ex: Neuro, Ortho, etc.) for exams you wish the filter to search for.
- **Description:** Enter a description for the filter you are creating.
- **Ref. Phys. Name:** Enter the name of the Referring Physician who's patients you wish the filter to search for.
- **Type:** Use the "Stats" pull-down menu to indicate how Stat exams should be included in your search. If you only want the filter to search for exams with images, check the "Must Have Images" checkbox and if you wish to exclude exams that have already been read, check the "Must not be Read" option.
- **Date Period:** These options limit the chronological scope of the filtered search.
- **Exam Statuses:** These options limit the scope of the filter to certain Exam Statuses.
- **Patient Age:** This option limits the scope of the filter to patients of a certain age. If you wish to limit the results of the filter based on the patient's age, check the box and enter an age range.
- **Performing Resource:** This option limits the scope of the filter to exams coming from a particular performing resource or multiple performing resources. Add the exact name of the performing resource. If you wish to limit the filter to multiple performing resources, enter their names separated by commas.

Name your filter in the "Name" field and then fill the dialogue in with the necessary information making sure that the filter is unique and also functional. Please note that you do not have to fill in all the fields. Note also that if the Modality field is left blank, the filter will apply to all available modalities. Only the Modality field has this characteristic.

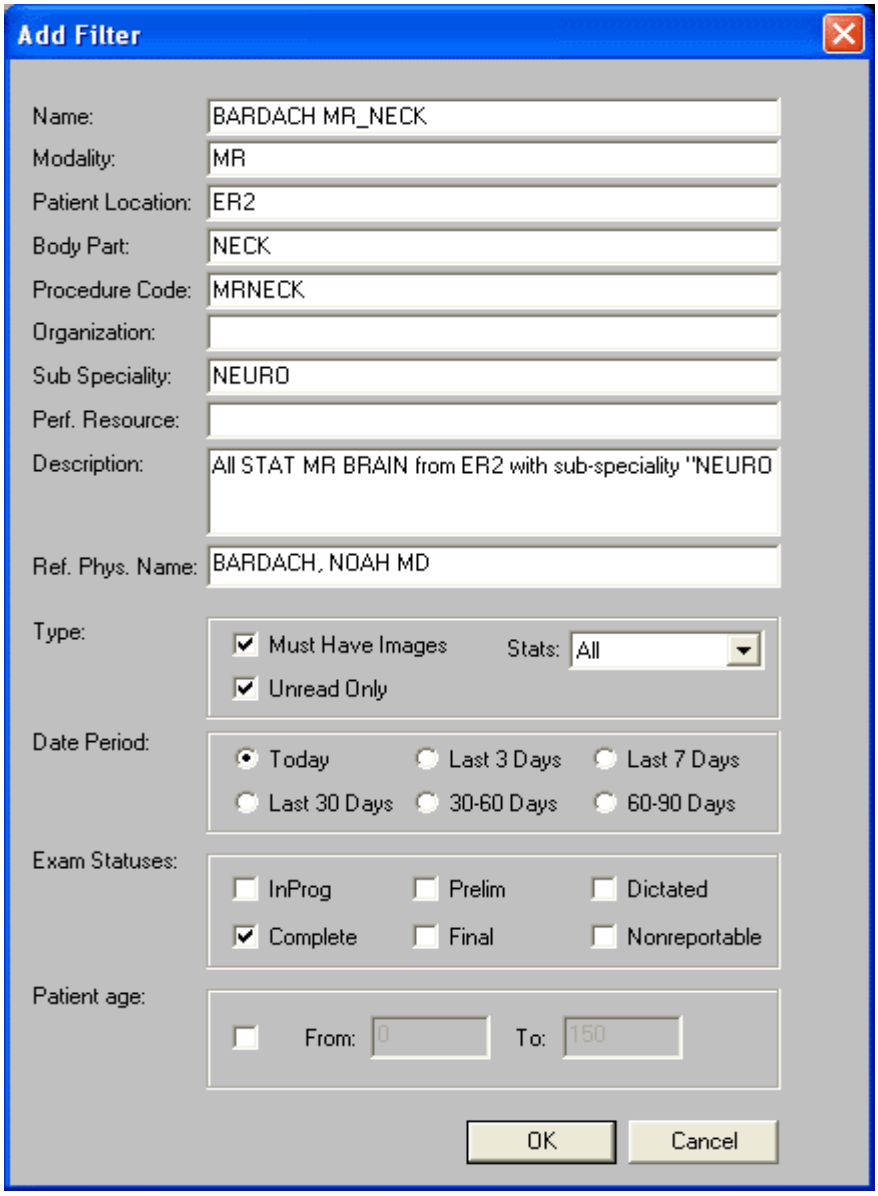
Special care must be taken with the generation of a filter. When completing in the fields, you must use your institution's standard codes and syntax. For example, if your institution's code for the Emergency Room is "ERC" then you must use "ERC" to specify the Emergency Room. If you enter "ER", "Emergency" or any other code, the filter will not work. For example, if you wish to create a filter that isolates exams with a description of a particular ailment or symptom, the language in your filter must match the description exactly or the filter will fail. If you enter "High blood pressure" in the description field but your institution uses the code "HBP" as standard notation, your filter will fail. In that instance, you would have to enter "HBP" in the description field.

Once you have finished specifying the filter criteria, click "OK". The new filter will be displayed along with the pre-existing ones. You can create up to 100 system filters.

To edit a filter, highlight that item in the list and click the "Properties" button, as seen below.



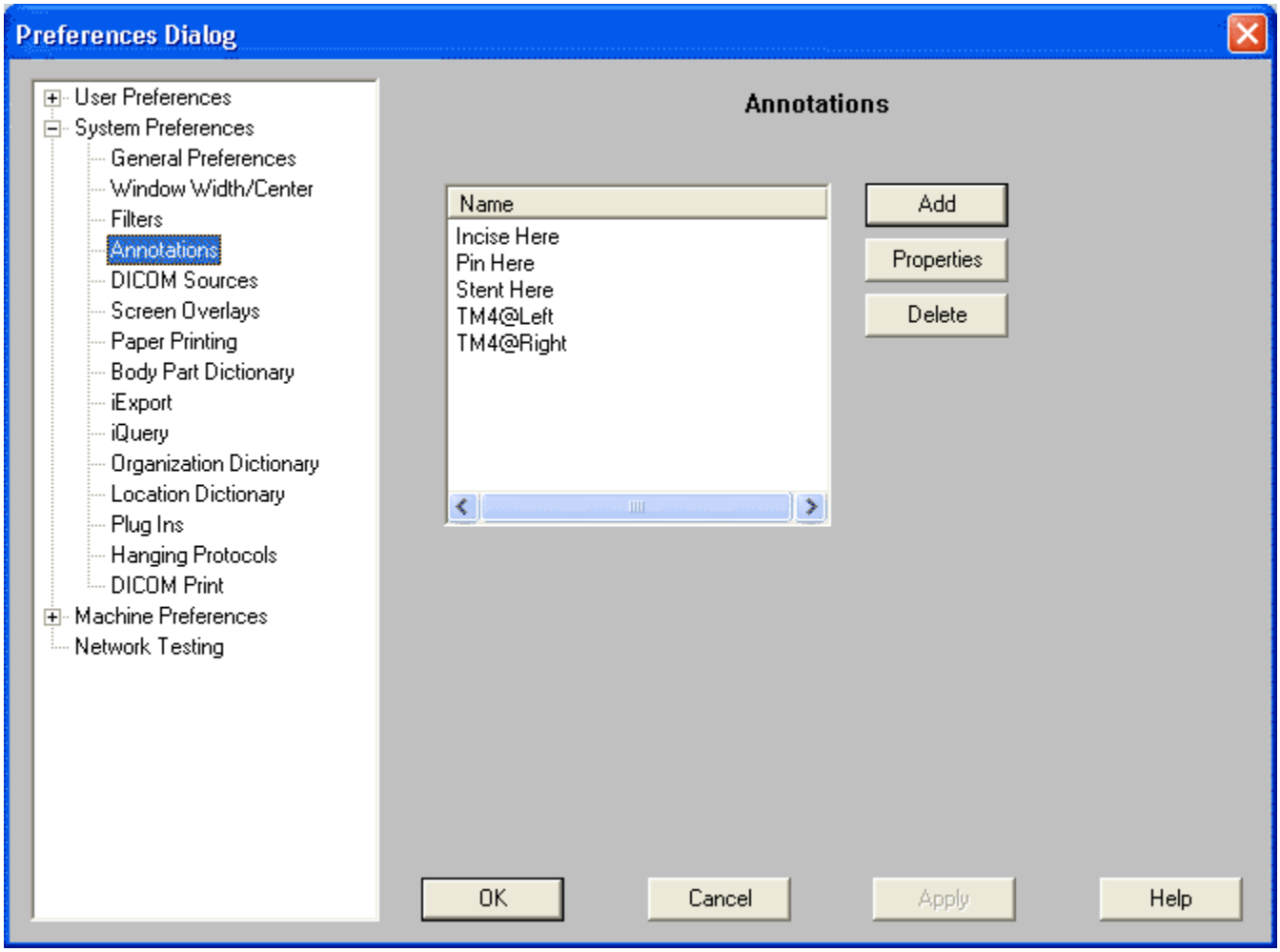
The following window, containing all the specifications for the selected filter, will be displayed as seen below.



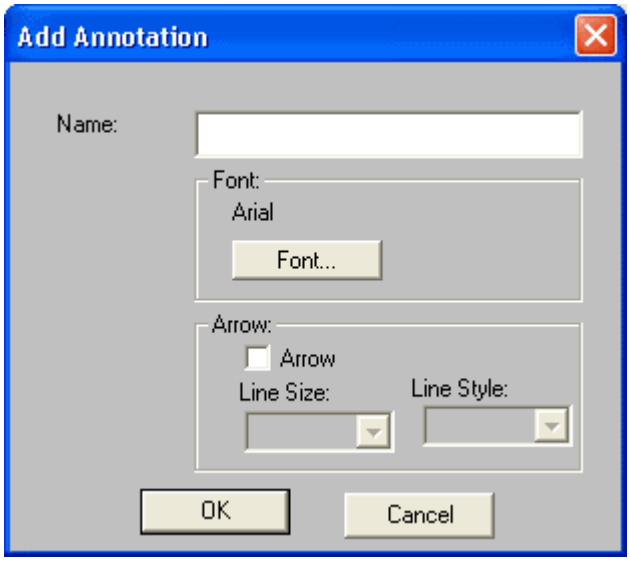
Make changes as desired and click the "OK" button. Your changes will be saved.

To delete a listing, highlight that listing by left-clicking it once, and then clicking the "Delete" button.

Annotations: Annotation preferences allow you to create preset annotations for use by iSite Radiology Users. These annotations are displayed alongside the system default annotations. You can name the annotation and specify its style. To access the Annotation preferences, click the "Annotations" item from the tree, as seen below.

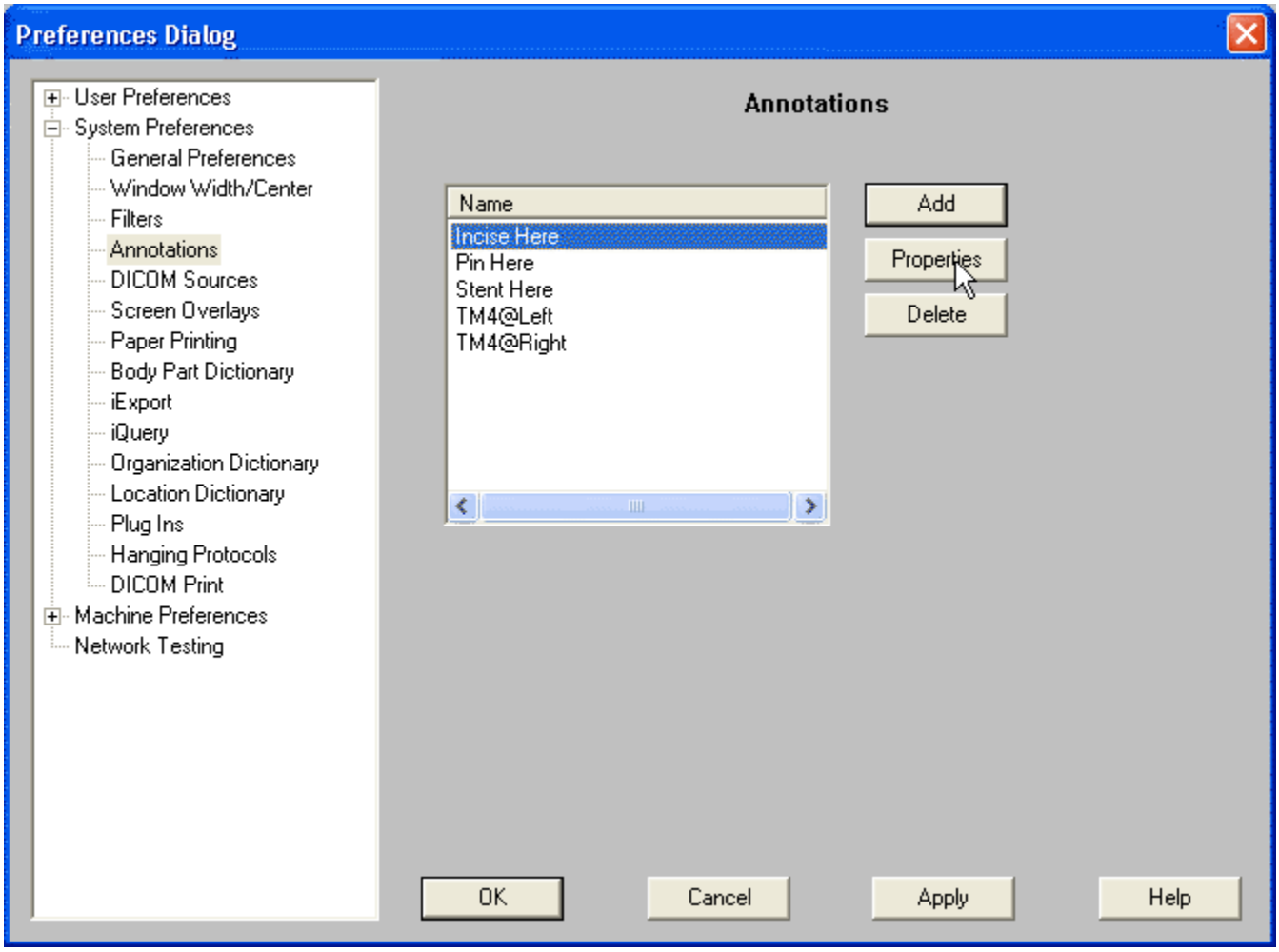


To add a new style, click the "Add" button. The following screen will be displayed.

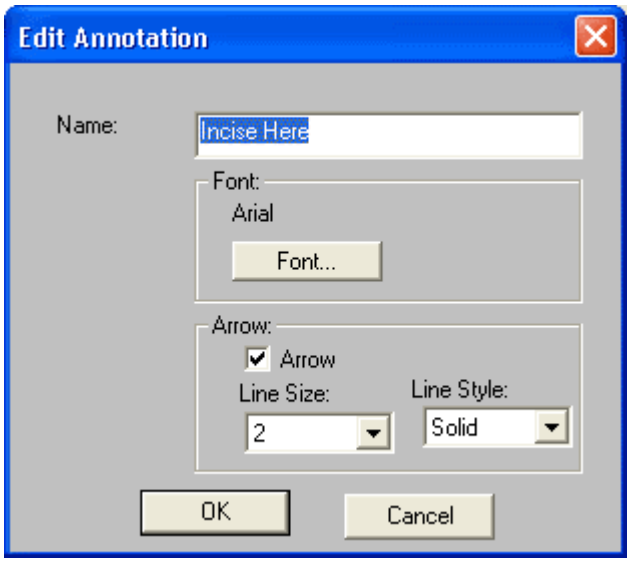


Specify a name for the annotation style and its characteristics, then click the "OK" button. The new annotation style will be displayed in the Annotations screen alongside any pre-existing styles.

To edit the properties of an annotation style, highlight that style and click the "Properties" button, as shown below.



The annotation style properties dialog will appear, as seen below.



Make changes as necessary and click the "OK" button to save your changes.

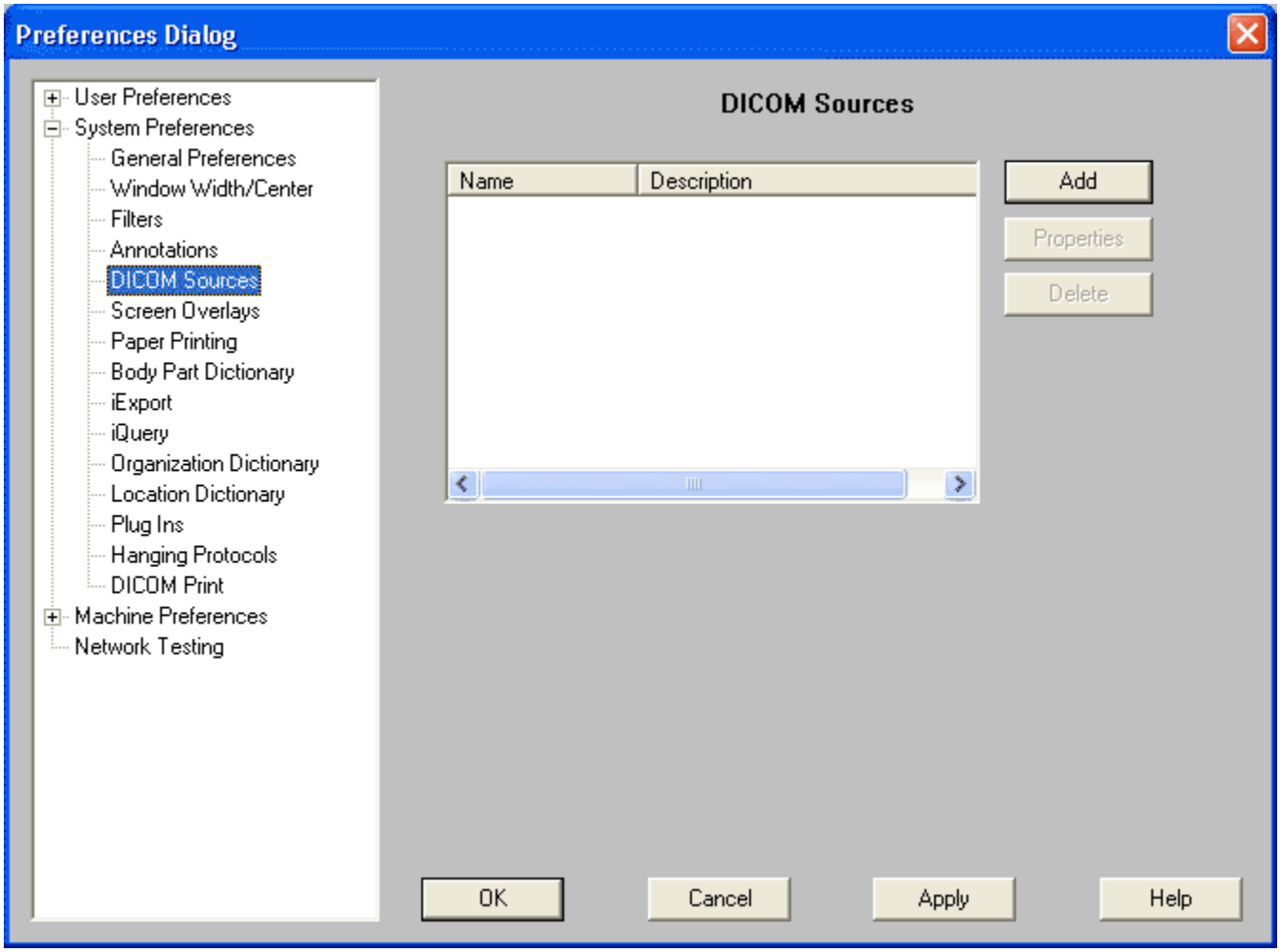
Annotation styles can be removed by highlighting the style listing and clicking the "Delete" button.

Specify a name for the annotation style and its characteristics, then click the "OK" button. The new annotation style will be displayed in the Annotations screen alongside any pre-existing styles.

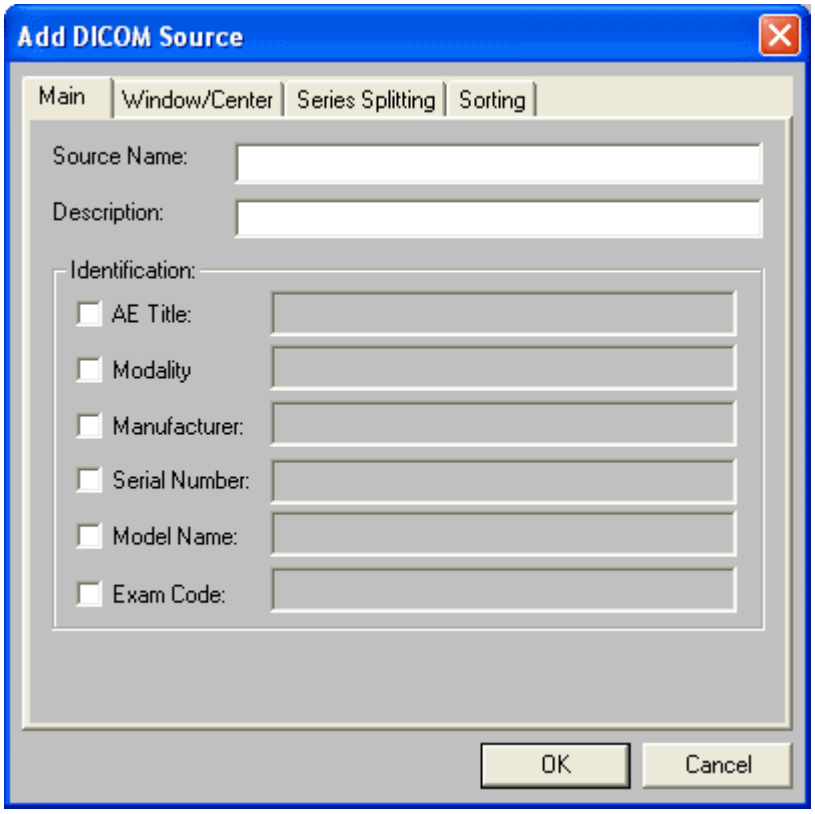
DICOM Sources: The sources from which iSite receives its default Window Width and Level information can be specified in this dialog. These DICOM Sources can be configured using one or more identifiers.

The DICOM Sources must have unique values. A DICOM Source that has the same number of selected identifiers and the exam same values within the identifiers will be deemed a duplicate and a message will be displayed: "DICOM Source already exists! Please modify one or more of the identifiers."

To access these options, click the "DICOM Source" item in the tree view control at left, as seen below.

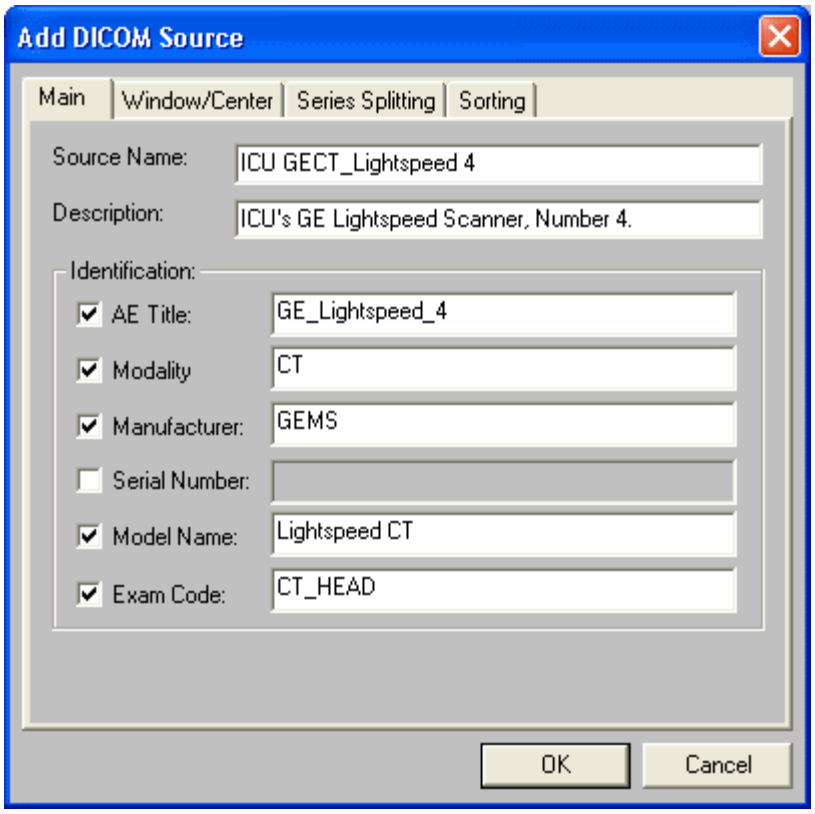


To add a new DICOM source, click the "Add" button. The following window will be displayed.



As can be seen from the image above, the Add DICOM Source dialog has four tabs: Main, Window/Center, Series Splitting and Sorting. Each one of these tabs needs to be filled in with the appropriate information for the DICOM Source to be adequately identified and properly linked to iSite Radiology. Click each tab to proceed.

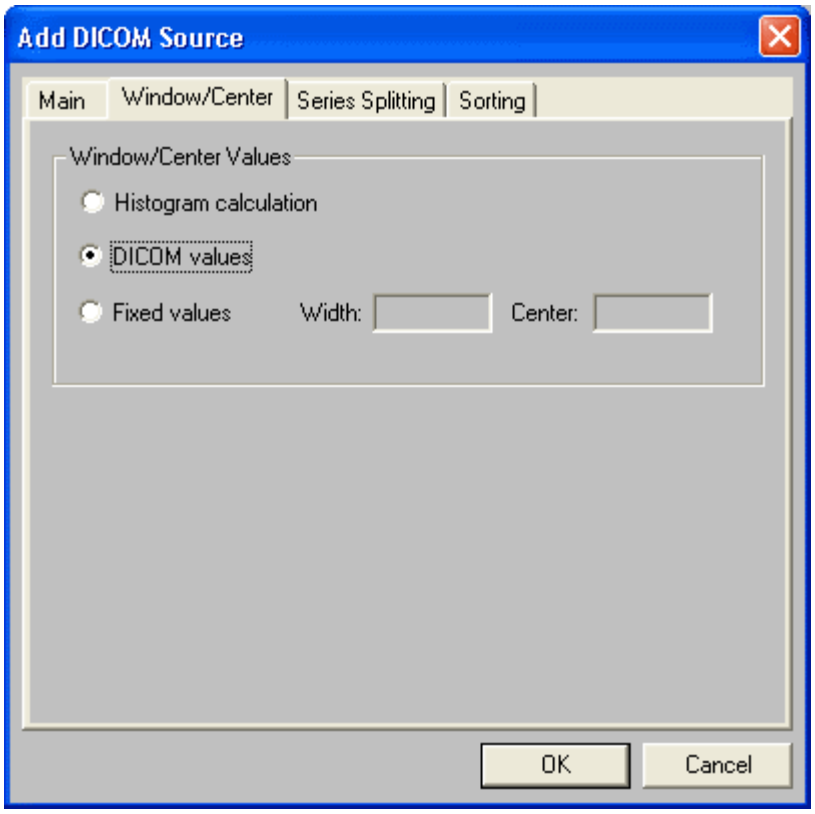
Main: In the Main Tab, enter a name for the DICOM Source as well as a description. These two fields do not have to match a setting on your DICOM Source, rather you can fill them in as desired. In the Identification section, check each box for which you have information. For example, if your DICOM Source does not have a serial number, leave that check box blank. The information that you do provide must exactly match that of the DICOM Source you wish to add.



If you wish to add a generic DICOM Source, you can do so by only specifying the modality field.

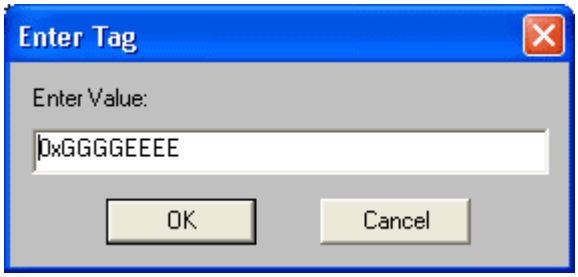
Please note that if two or more DICOM Sources are configured with an equal number of matching identifiers, then the DICOM Source containing an Exam Code will take precedence and will be applied over the DICOM Source that doesn't contain an Exam Code.

Window/Center: In this tab, choose which Window/Center values you wish to use for this source. The options are Histogram calculation, DICOM values and Fixed values, as seen in the example below. If you are configuring a manufacturer's DICOM Source, you must select the DICOM Values option.



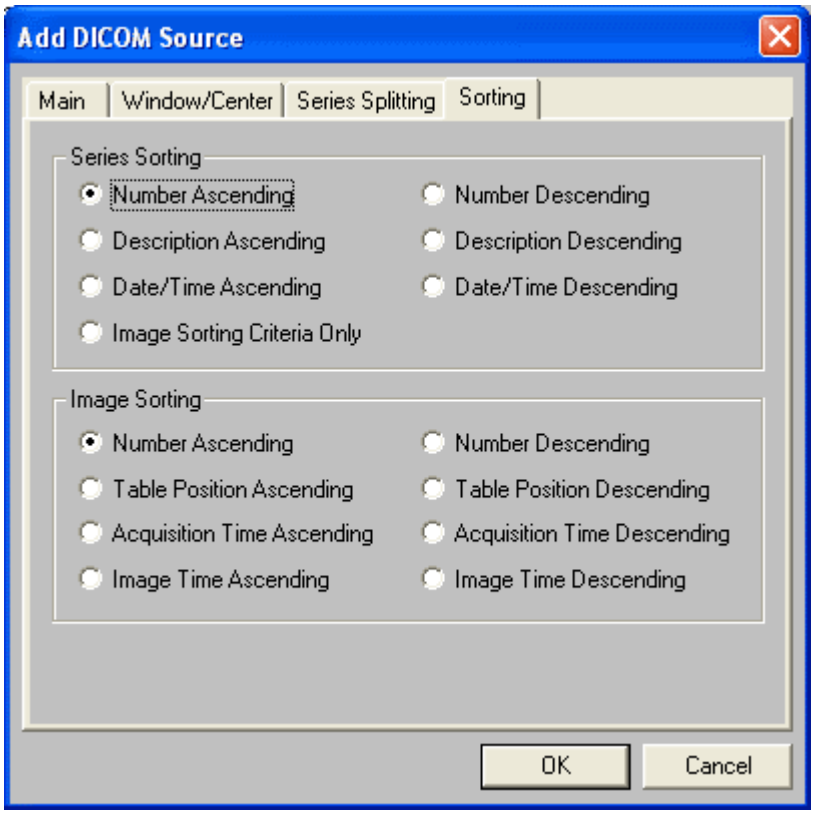
Series Splitting: This tab allows you to specify how you would like to split series. The listing of attributes displays the DICOM tag and the tag's name, as seen below. Please note that predefined, default attributes/tags cannot be removed.

If you would like to add an attribute, click the "Add Attribute" button. The following window will appear.



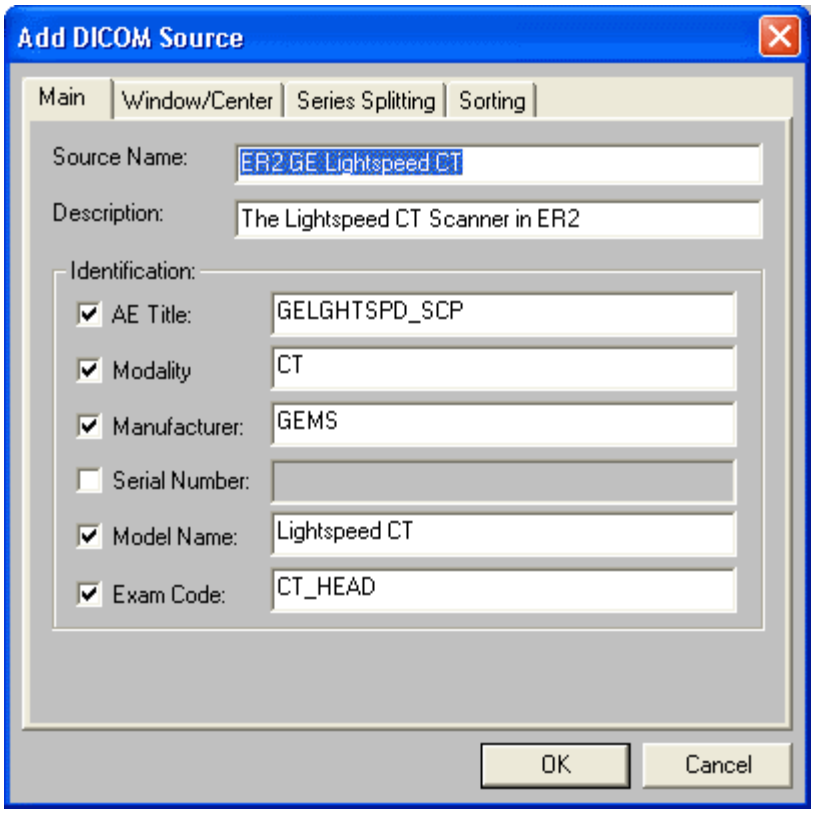
Enter the value as desired and click the "OK" button. The DICOM tag will be displayed alongside the others.

Sorting: The Sorting tab lets you specify how the studies and series coming from this DICOM Source will be sorted. Select an option as desired. If you wish to sort only by image criteria and not series criteria, select the "Image Sorting Criteria Only" radio button in the "Series Sorting" options group.



When you have finished specifying the details for the DICOM Source you are adding, click the "OK" button. When you return to the Preferences Dialog, you MUST click the Apply button for your changes to be preserved.

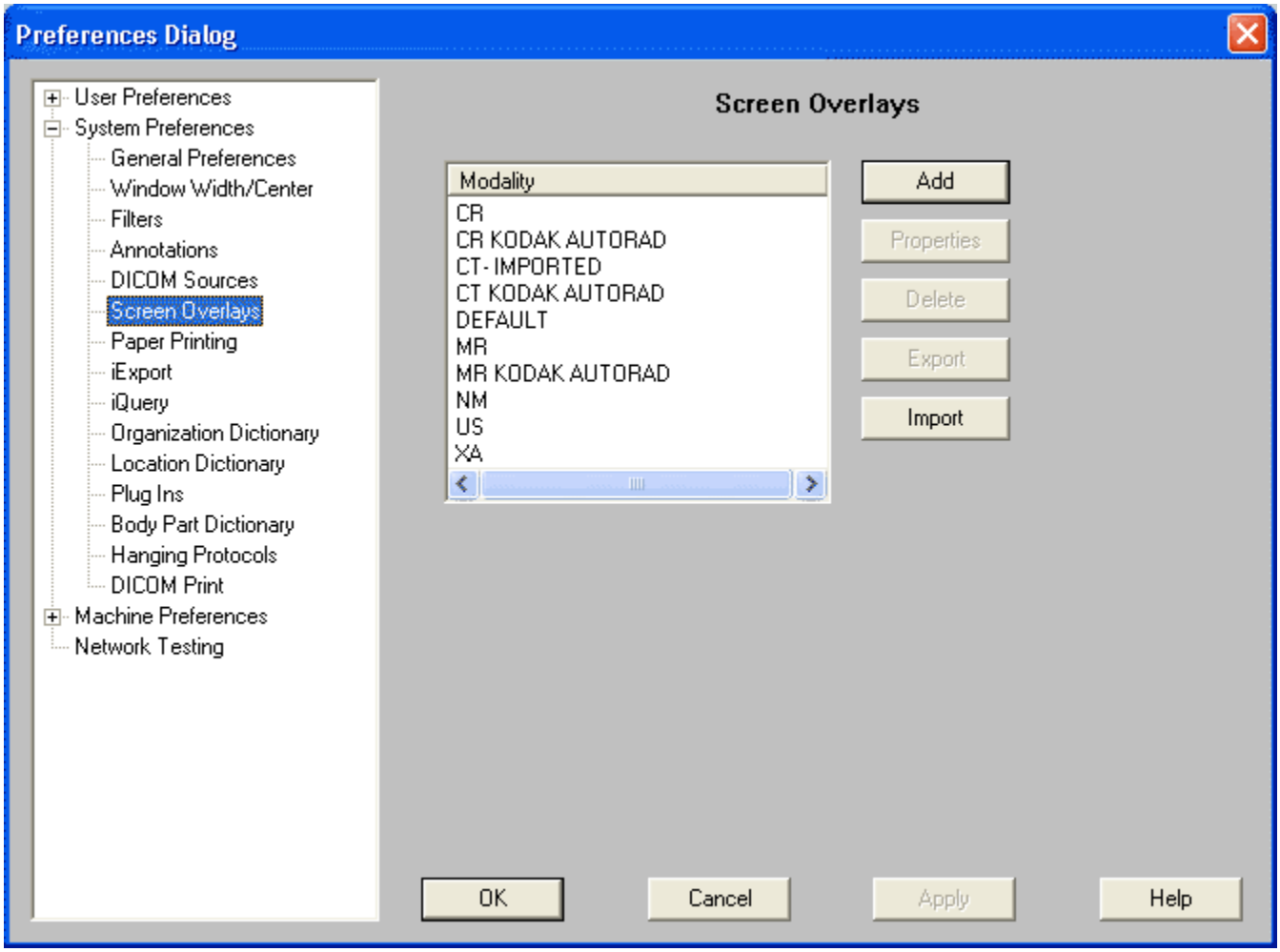
To edit a DICOM Source's settings, highlight the listing and click the "Properties" button. The following window will appear.



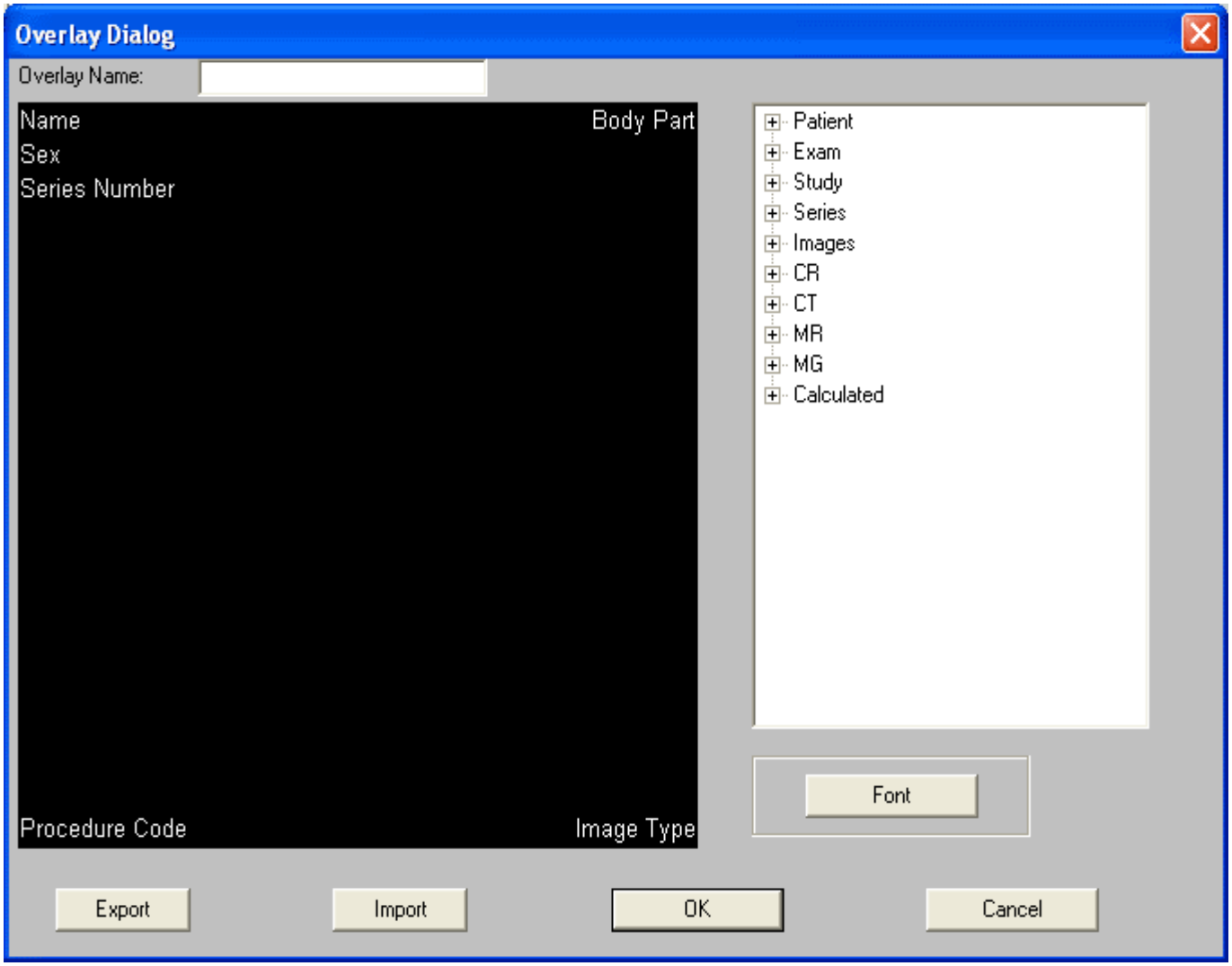
Make changes to the various tabs as necessary and then click "OK" to return to the Preferences Dialog. Once there, make sure to click the "Apply" button to make your changes permanent.

To delete a DICOM Source, highlight the listing and click the "Delete" button.

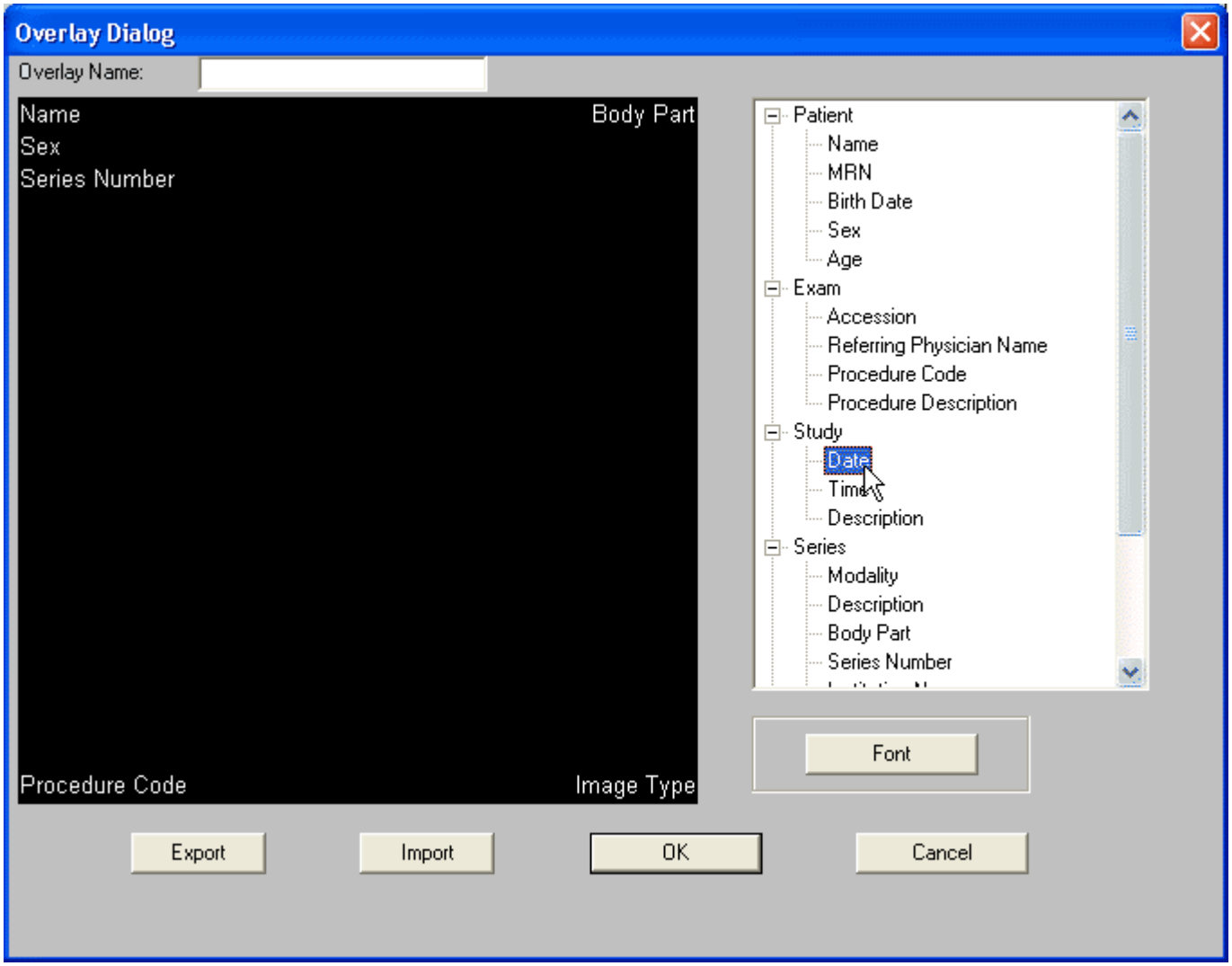
Screen Overlays: iSite allows you to configure the information overlays for the various modalities handled by the program. You can specify where various patient and exam information will display on the image. To access these options, click the "Screen Overlay" item in the tree view control at left, as seen below.



To add a new screen overlay, click the "Add" button at right. The following screen will be displayed.



Enter a name for the new overlay. Note that this name must correspond to a modality that sends images to iSite, for example CR or US. Expand the various sections of the menu at right, as seen in the image below.



The sections of the menu represent the various overlay options available to you. For example, as seen above, you can add patient name, MRN, DOB, sex or age as overlay info. Up to 50 overlay items can be added to an image, approximately 12 in each corner. In addition, multiple items can be added to each line (date, age, etc.). To add an item, highlight that item by left-clicking and then dragging the item into the screen mockup at left. The complete list of screen overlays is presented below:

- **Patient:**
  - Name, MRN, Birth Date, Sex, Age.
- **Exam:**
  - Accession, Referring Physician Name, Procedure Code, Procedure Description
- **Study:**
  - Date, Time, Description.
- **Series:**

- Modality, Description, Body Part, Series Number, Institution Name, Patient Position.

- **Images:**
  - Image Type, Acquisition Date, Acquisition Time, Instance Number, Images in Acquisition, Acquisition Number, Spacing Between Slices, Slice Thickness, Slice Location.

- **CR:**
  - Dose (IgM). ** Please note: this computed tag looks for the Agfa-specific, private tag 0019,1015. Non-Agfa-specific (non-CR) will not seek this tag.

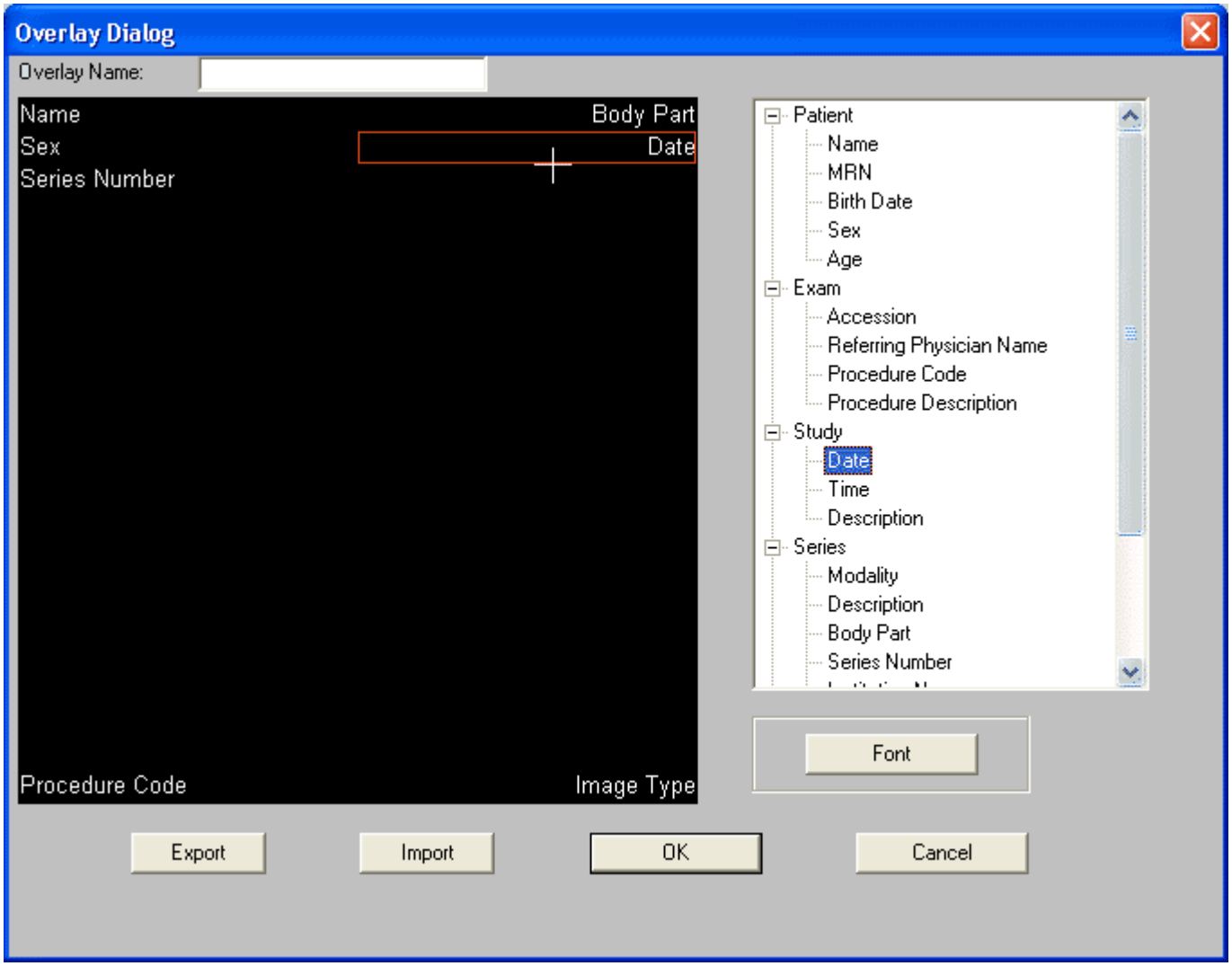
- **CT:**
  - KVP, Scan Options, Exposure Time, X-ray Tube Current, Gantry/Detector Tilt, Generator Power, FOV/Recon Diameter, Slice Gap.

- **MR:**
  - Scanning Sequence, Sequence Variant, Scan Options, Repetition Time, Echo Time, Frac NEX, Slice Spacing, Echo Train Length, Freq & Phase, FOV/Recon Diameter, Slice Gap.

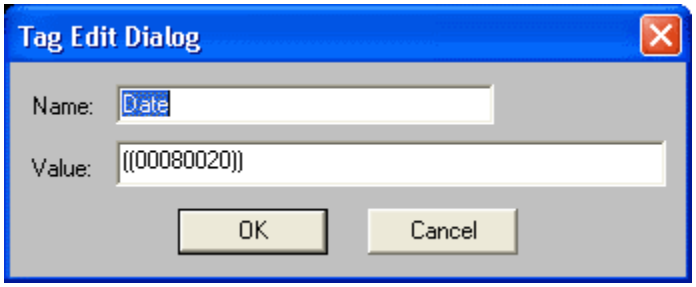
- **MG:**
  - Orientation.

- **Calculated:**
  - Window Width, Window Level, Number of Images in Window, Page Number (Printing), Total Pages (Printing), Image Number (in Window), PET Image Number, Link Status, Key Image, Zoom Factor, Positioner Primary Angle, Positioner Secondary Angle, Image Processing Parameters.

As seen below, a red box will indicate the location of the new element. Note that overlay information can only be placed in one of the screen's corners and not in the center of the image.



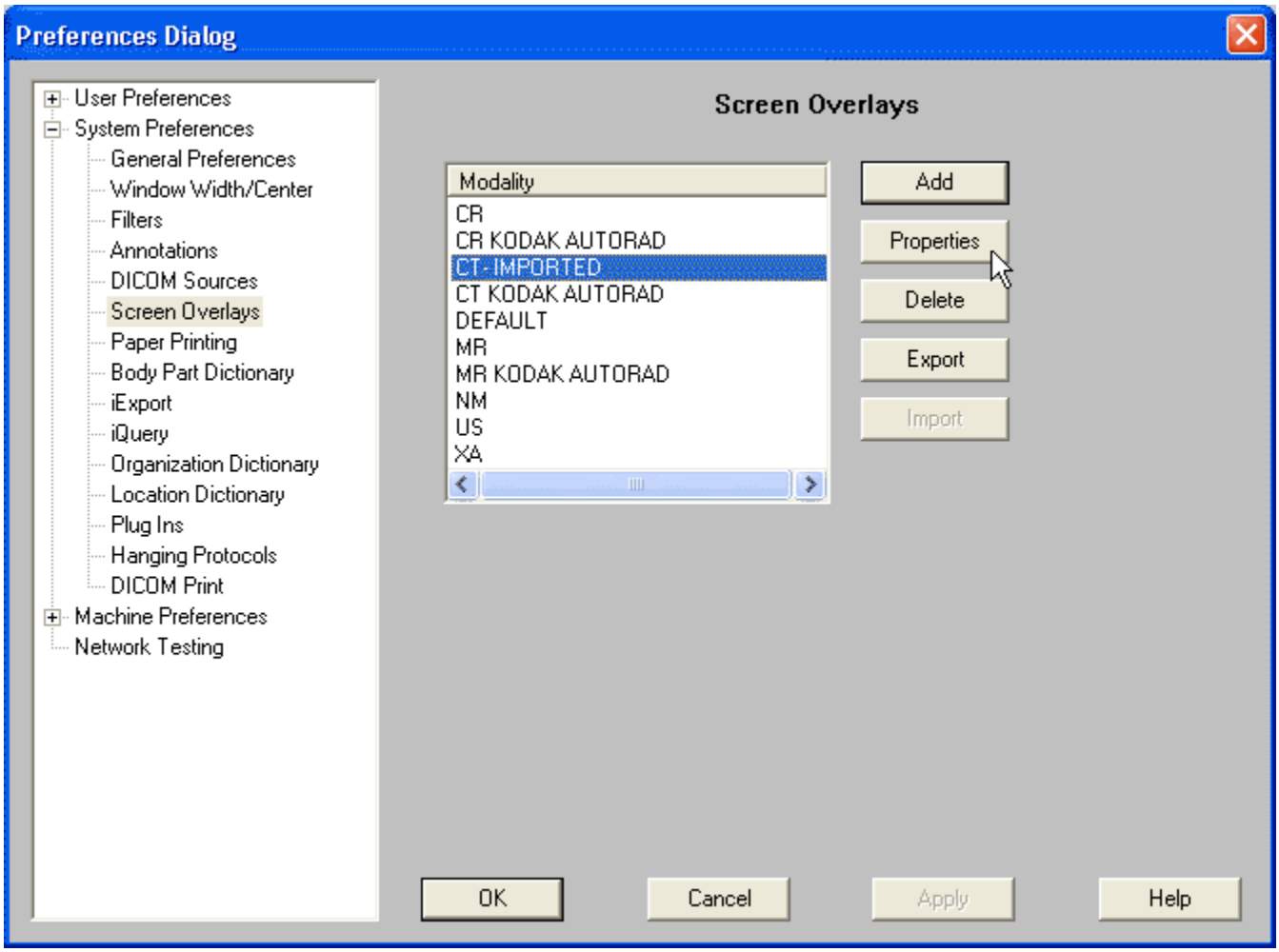
Furthermore, each individual tag can be customized by referencing specific DICOM tags. To customize the tags in this way, simply double-click. The following dialog will appear.



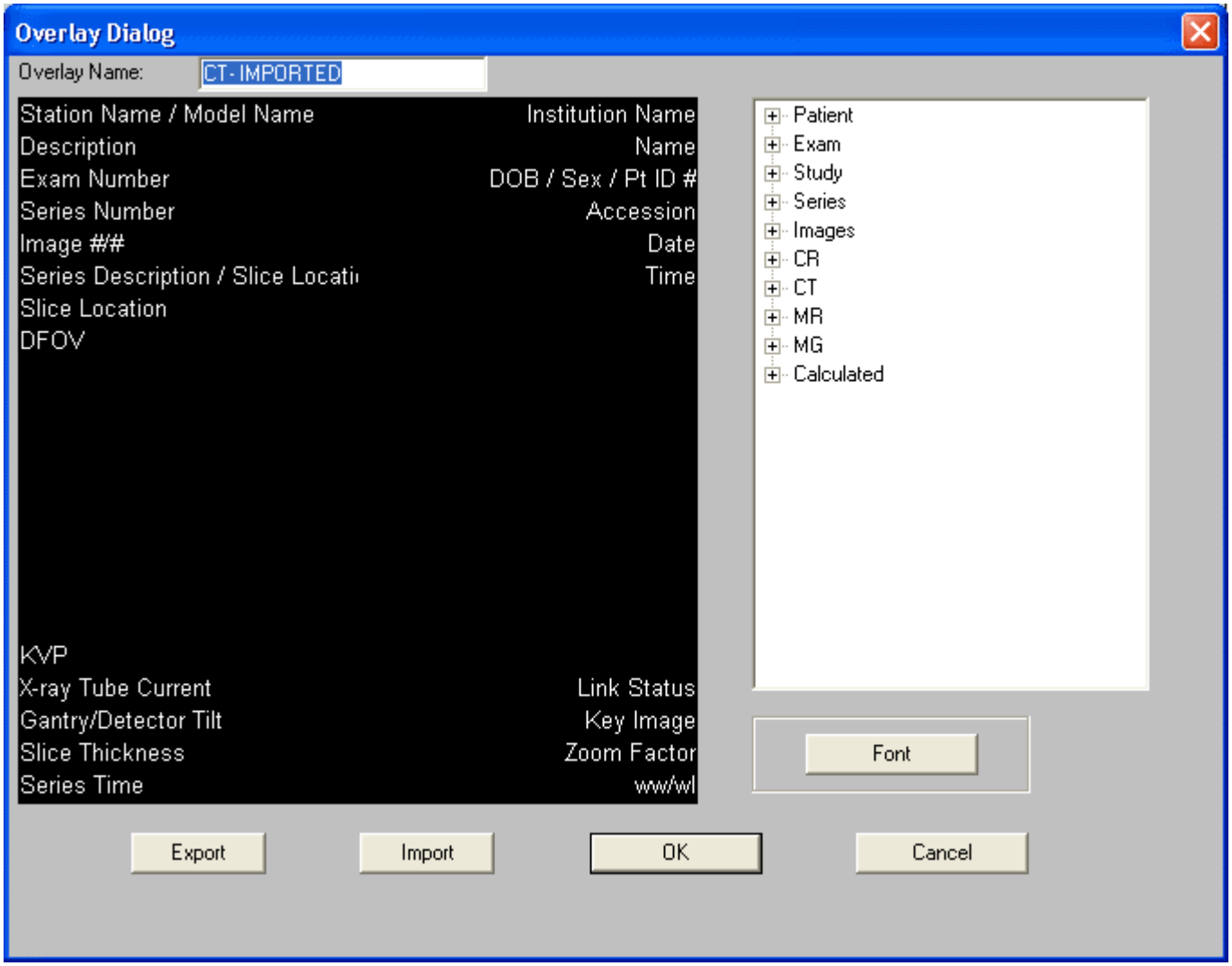
The tag name and value will be listed by default. To reference a particular DICOM tag, edit the value field as necessary. For image number, always use the DICOM Tag - Instance Number - 0020,0013. Please note, for Digital Mammography exams (MG), in order to see the Mammography Orientation and Laterality Display overlays, a separate MG Screen Overlay must be created.

When you have finished positioning the desired overlay elements, click the "OK" button to save your changes. You will return to the Screen Overlays dialog and your new overlay will be visible alongside the pre-existing ones.

To edit the properties of an existing screen overlay, highlight that listing and click the "Properties" button, as seen below.

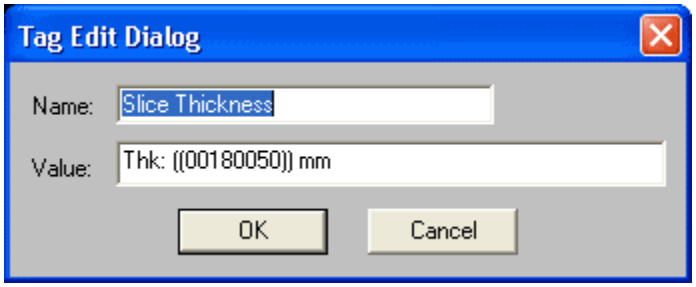


The overlay screen will appear, as seen below.



Items can be removed by clicking on them and dragging them out of the overlay window. Add items as discussed in the sections above. When you have finished editing the overlay properties, click the "OK" button to save your changes.

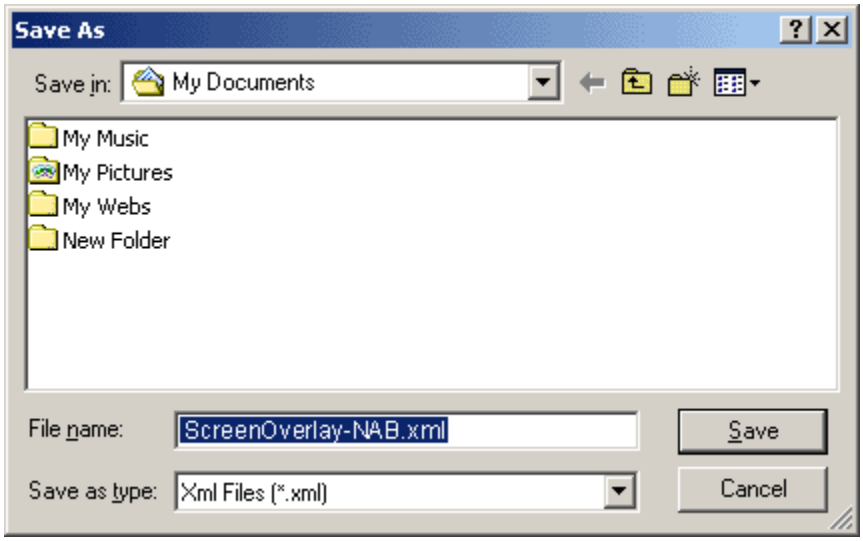
To edit a screen overlay tag, double-click that tag. The following window will appear.



Both the name and the value can be changed. The value corresponds to the DICOM meta data field which carries the information in question.

Screen overlay configurations can be removed by highlighting that item and clicking the "Delete" button.

If you wish to export a Screen Overlay listing, select the desired Screen Overlay and click the "Export" button. The following dialog will appear.

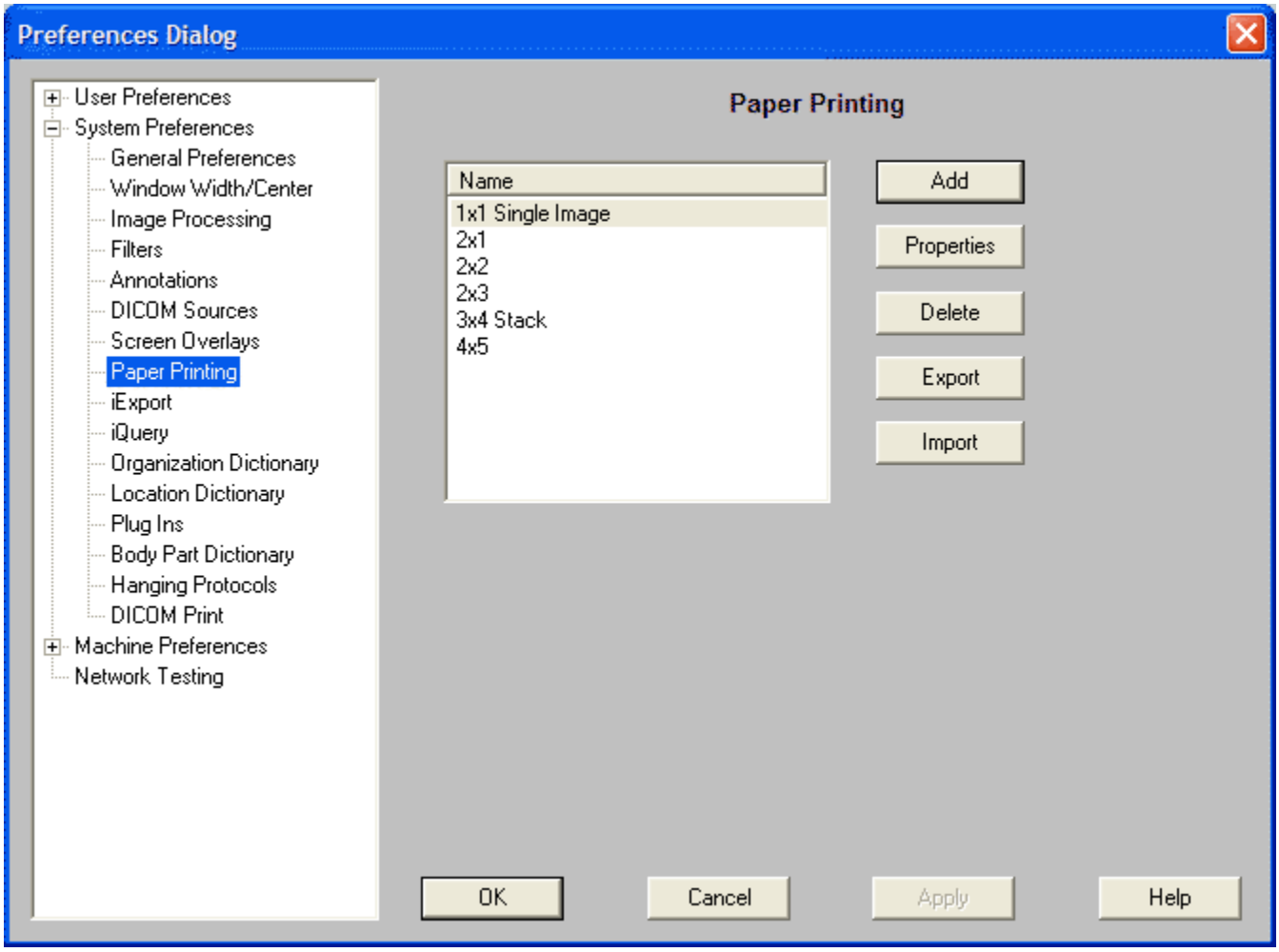


Choose a name for the exported file and click the "Save" button. The file will be saved in .xml format in the chosen directory.

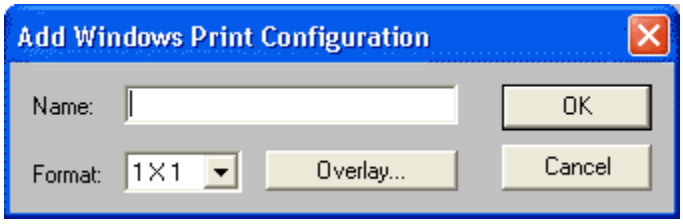
If you wish to import a Screen Overlay listing, click the "Import" button. Choose the desired .xml format file and click the "Open" button.

You can cancel your changes at any time by clicking the "Cancel" button.

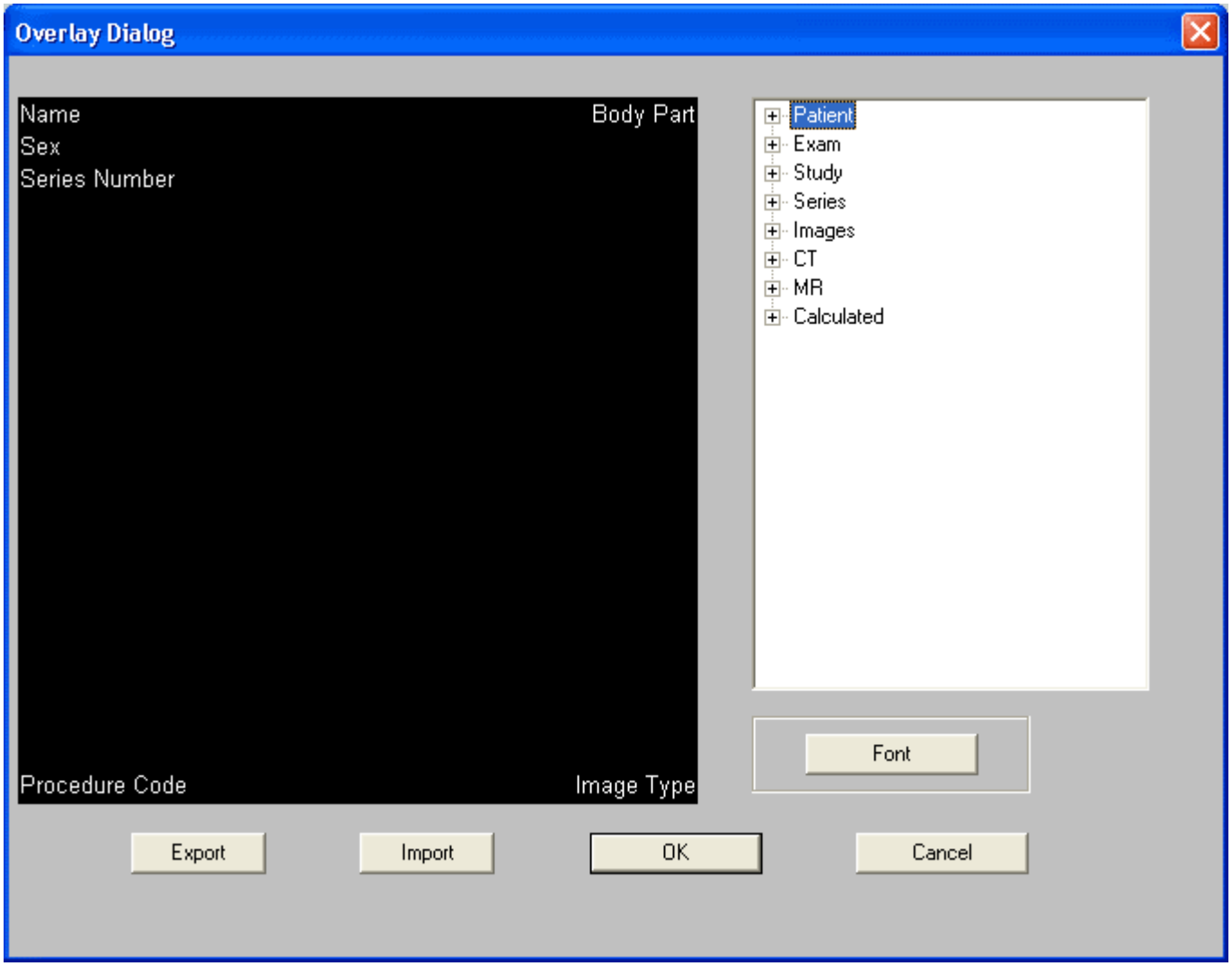
Print Configurations: iSite allows you to configure the way in which exams and images are printed. You can create unique print configurations that users can select from and specify exactly how image metadata will be printed as an overlay. To access these options click the "Print Configurations" item in the tree view control at left. The following screen will appear.



To add a new print configuration, click the "Add" button. The following screen will appear.



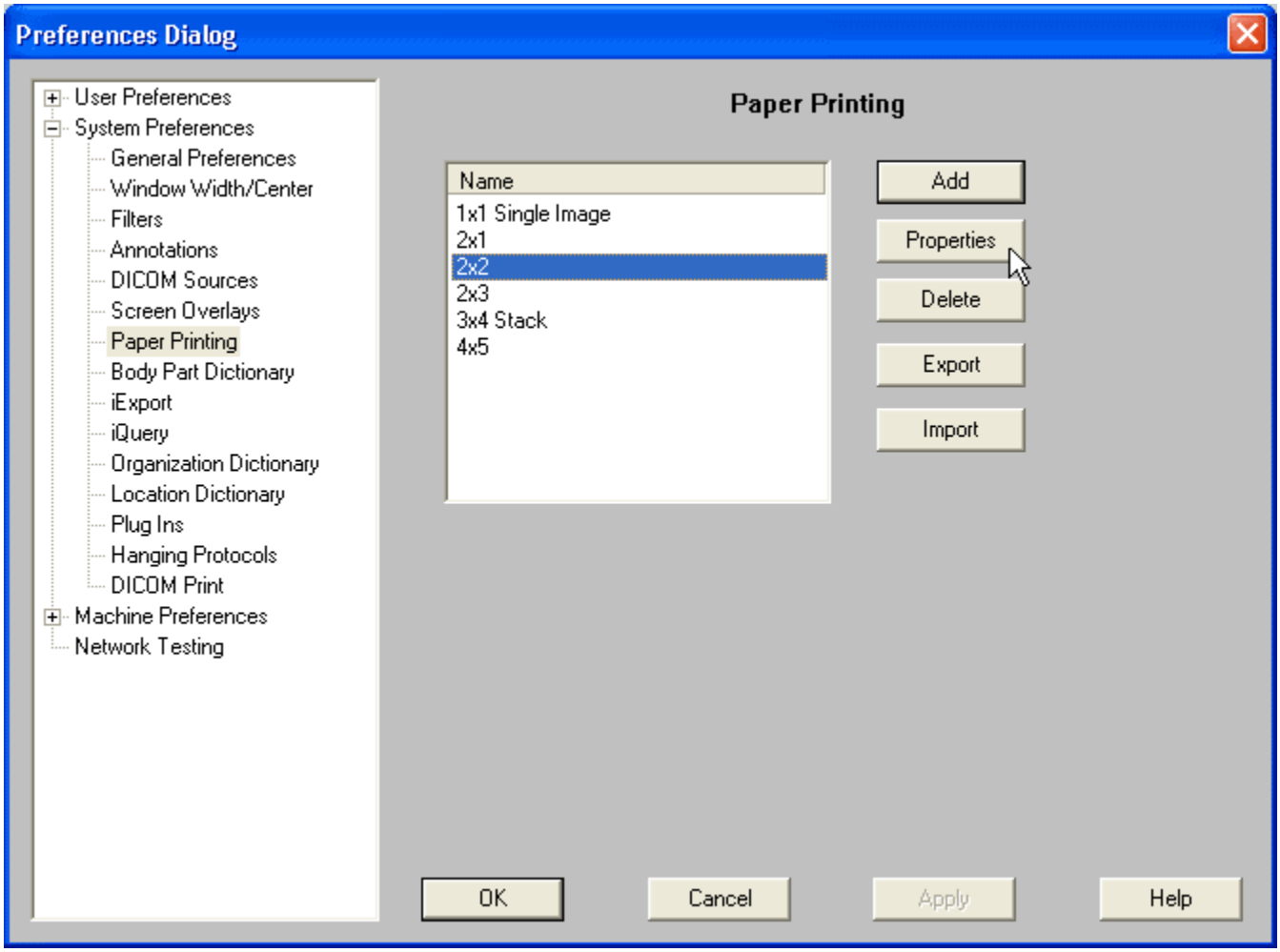
Fill in the necessary information. If you wish to configure the print overlay, click the "Overlay..." button. The following screen will appear.



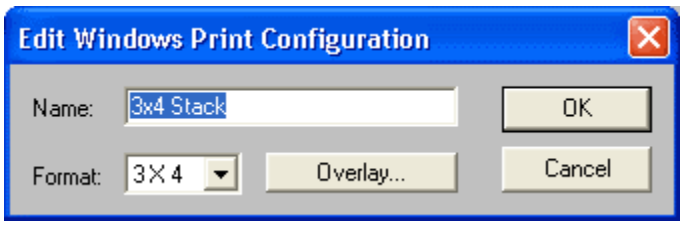
Configure the overlay as discussed in the "Screen Overlay" section of this chapter.

When you have finished, click "OK" then click "OK" again in the "Print Configuration" window to save your changes. Your new Print Configuration will be displayed alongside the pre-existing ones.

To edit the properties of a Print Configuration, highlight that configuration in the list and click the "Properties" button as shown below.

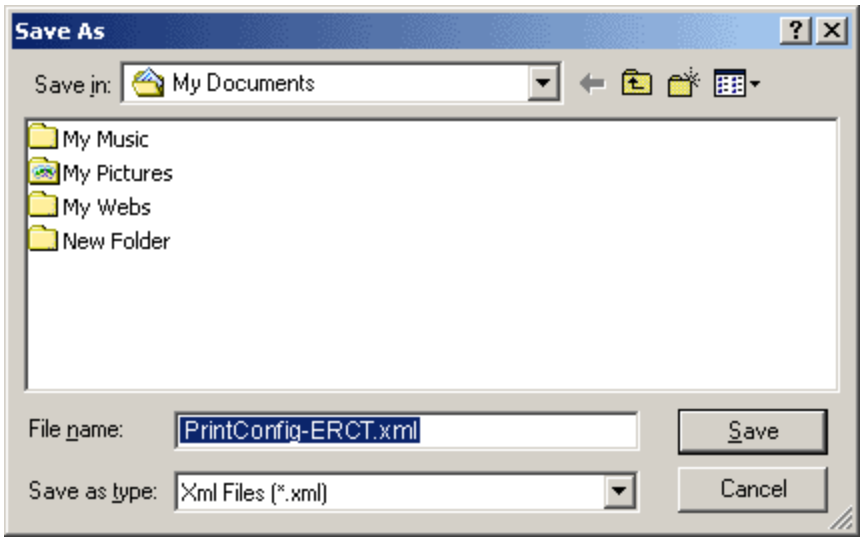


The following window will appear.



Make the necessary changes to the configuration and click the "OK" button. Your edits will be saved.

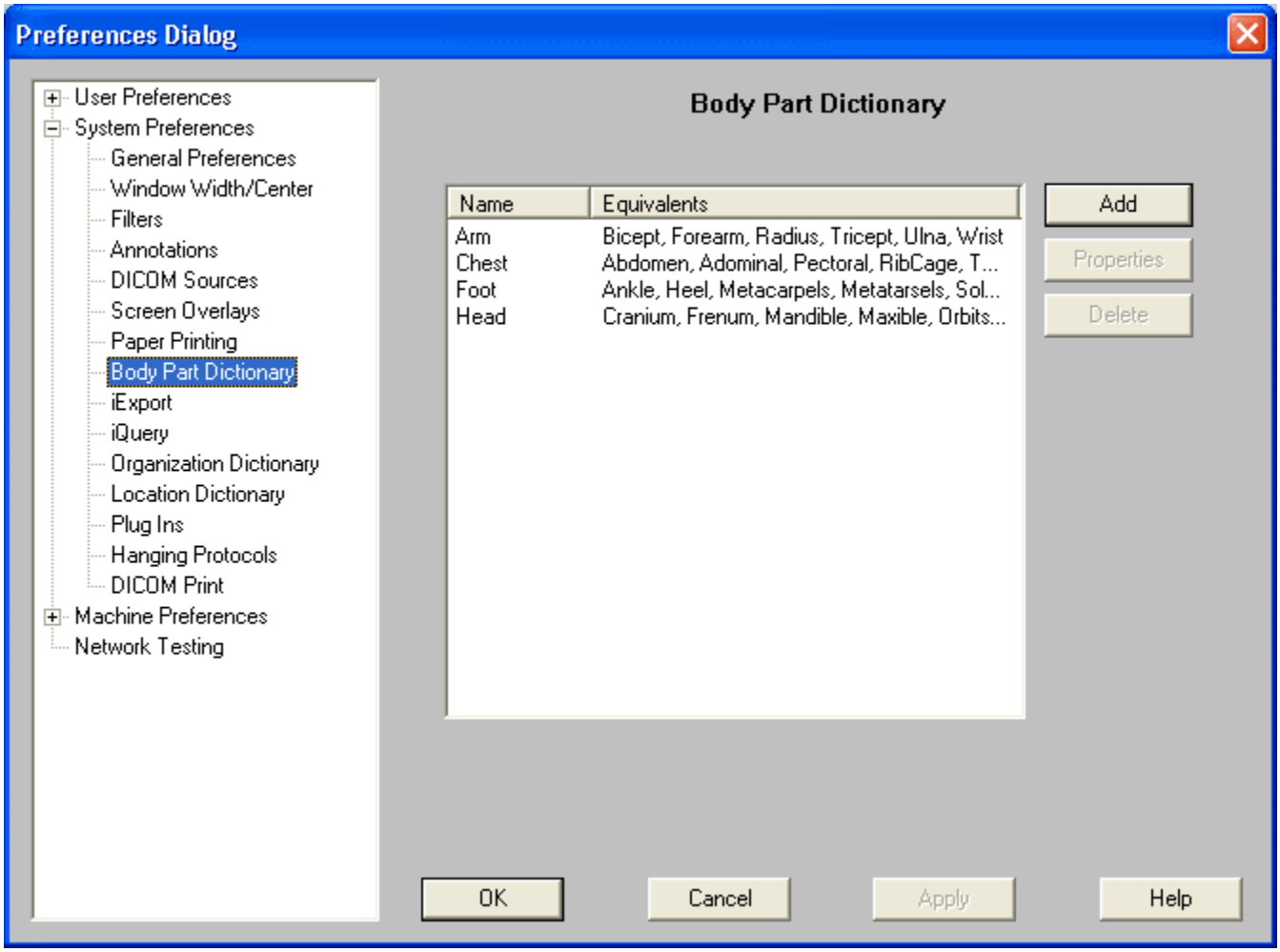
If you wish to export a Print Configuration listing, select the desired filter and click the "Export" button. The following dialog will appear.



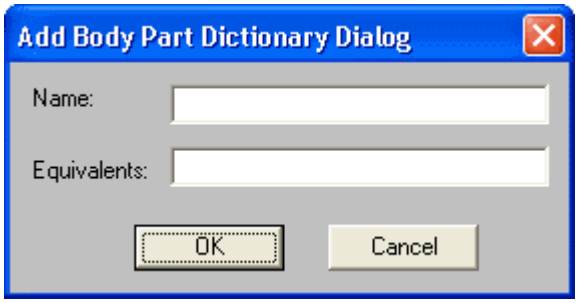
Choose a name for the exported file and click the "Save" button. The file will be saved in .xml format in the chosen directory.

If you wish to import Print Configuration listing, click the "Import" button. Choose the desired .xml format file and click the "Open" button.

Body Part Dictionary: iSite allows you to configure the body part dictionaries that your institution will be using in conjunction with various parts of the program. The various body part definitions can be edited and removed. New definitions can also be added. To access the Body Part Dictionary, click that listing from the list at left, as seen below.

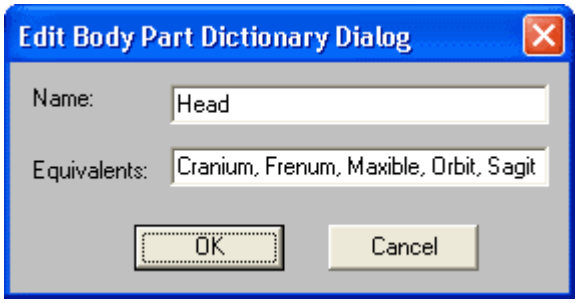


To add a new body part definition, click the "Add" button. The following window will appear.



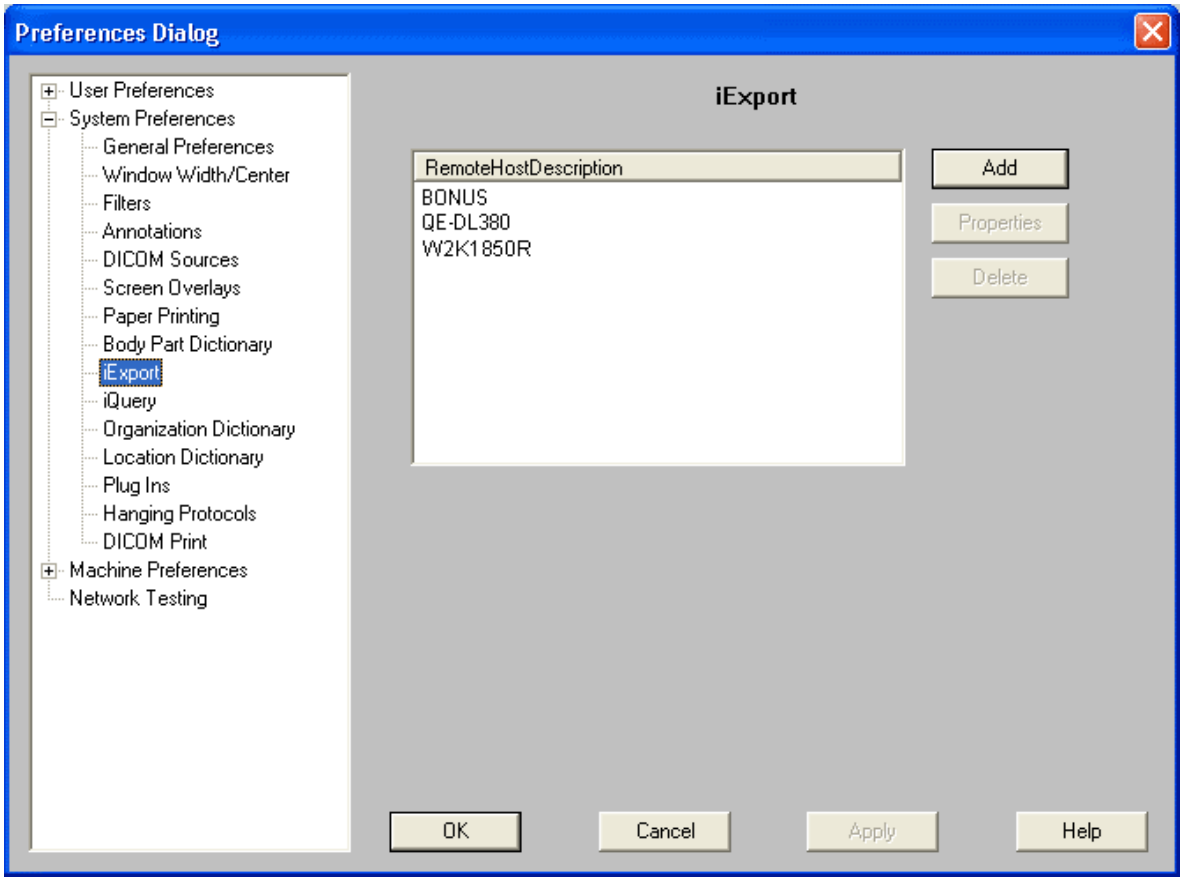
Enter the name for the body part and then a comma-delimited list of all equivalents, as seen above. When you create the list of equivalents, try to be as expansive as possible so that iSite is able to process as many variants of a body part as possible.

To view the properties of an existing body part definition or to edit a definition, highlight the definition listing and then click the "Properties" button. A window similar to the one shown below will appear.

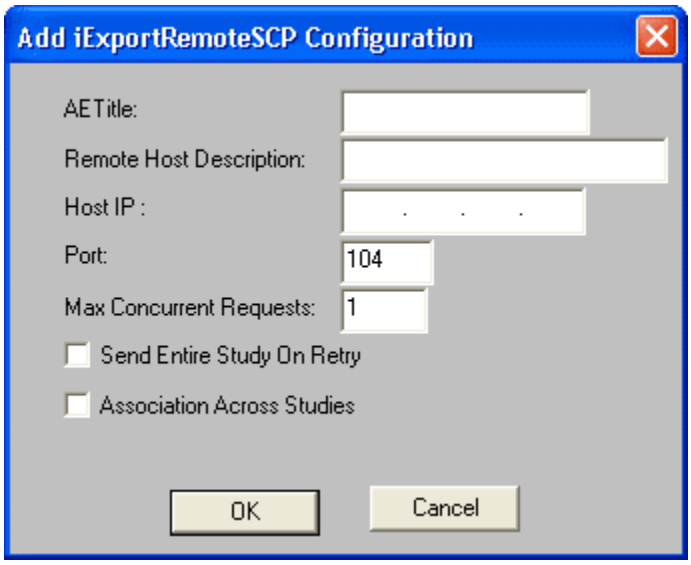


Make changes as necessary and then click the "OK" button. Click the "Apply" button to make your changes permanent.

iExport: iExport is the mechanism by which iSite exports exams in DICOM format to another DICOM device, such as a DICOM printer or 3D imaging system. In the iExport Preferences section, DICOM forwarding addresses can be added and/or edited. To view the iExport preferences, click the "iExport" listing from the list at left.



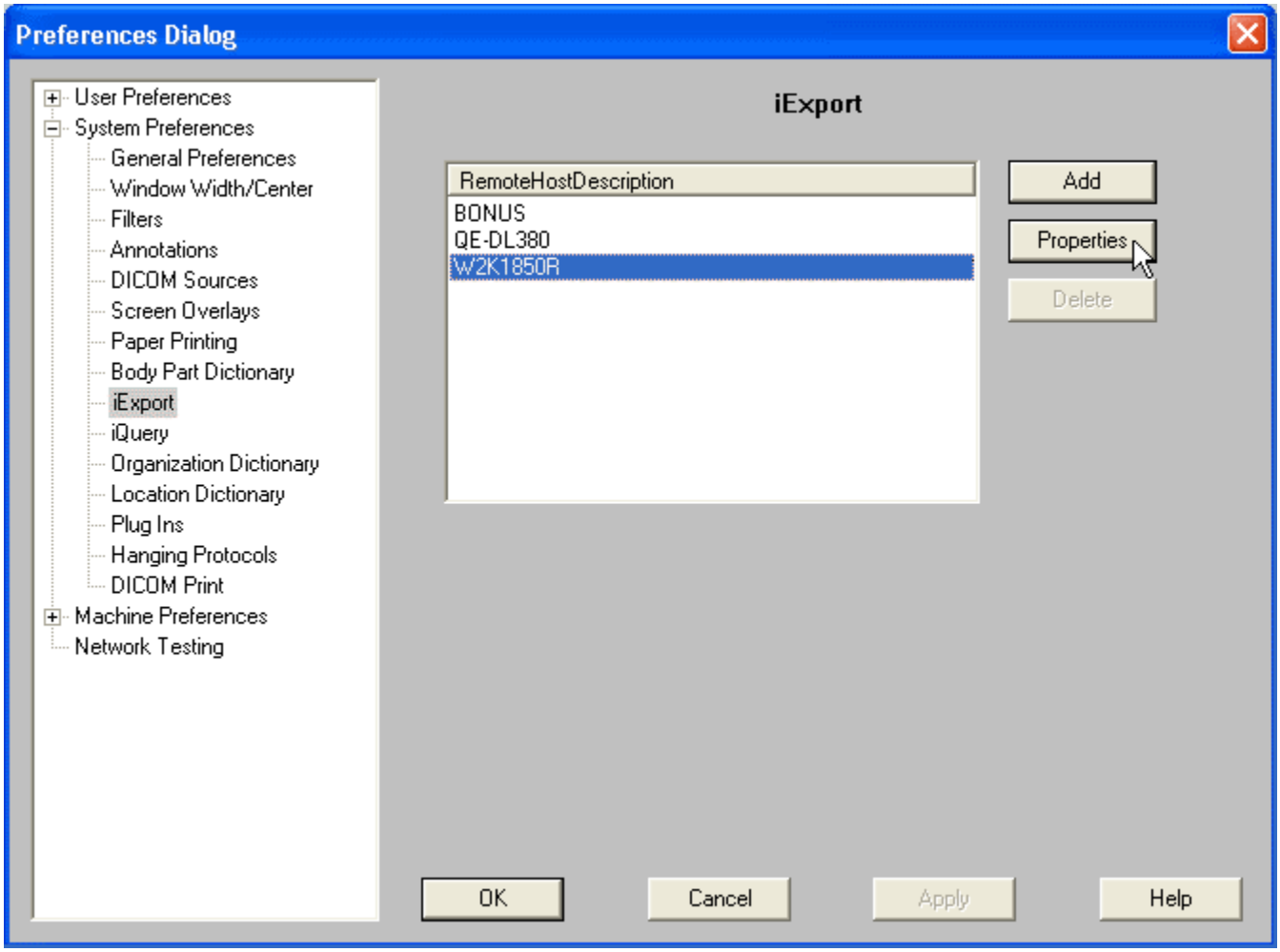
To add a new DICOM forwarding address, click the "Add" button. The following window will appear.



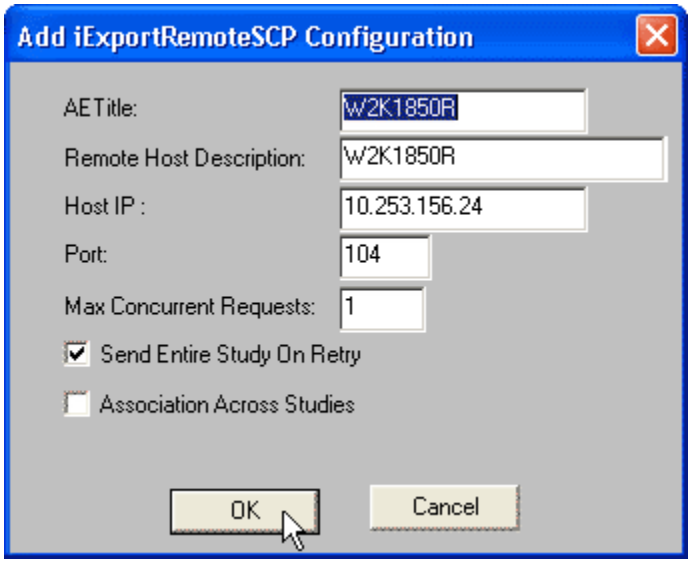
Fill in all necessary fields. The "AE Title" field should be filled in with the AE_Title of the DICOM Remote Host to which you wish to forward. In the Remote Host Description field, enter a brief description of the remote DICOM device. List the Port number on which you want the request to take place and enter the number of simultaneous associations that you want the receiving device to entertain in the "Max Concurrent

Requests" field. If you wish all exams in the study to be resent when an export fails and is being retried, click the "Send Entire Study on Retry" checkbox. If you wish an association between the iSite Server and the receiving device to be kept open when multiple studies are being sent (instead of opening and closing a separate association for each study), check the "Association Across Studies" checkbox.

Click "OK" when done. The new listing will appear in the list alongside the pre-existing ones. To edit a listing, highlight that listing and click the "Properties" button as shown below.

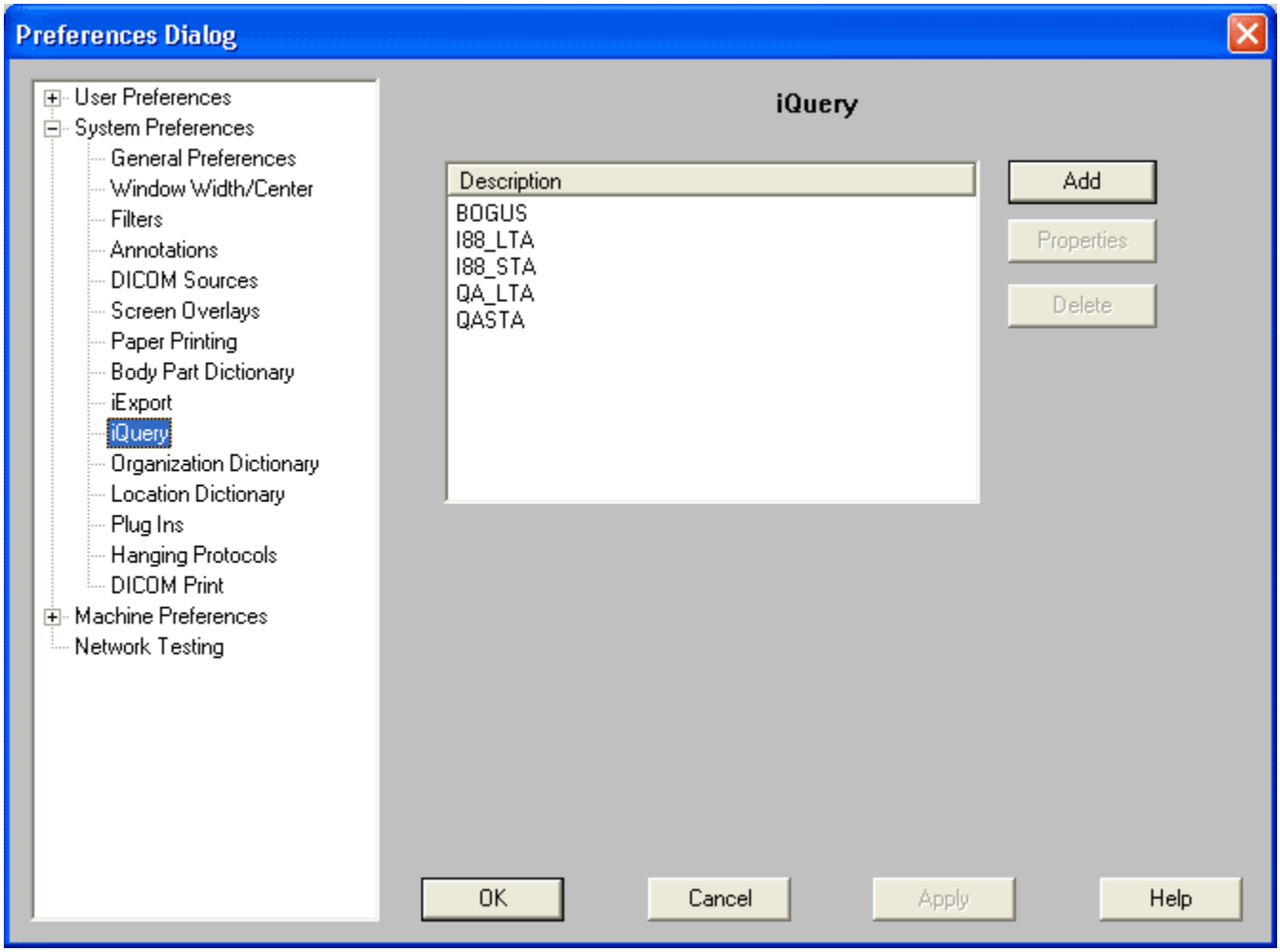


Edit the properties as needed, as shown in the window below, and click "OK" when finished.

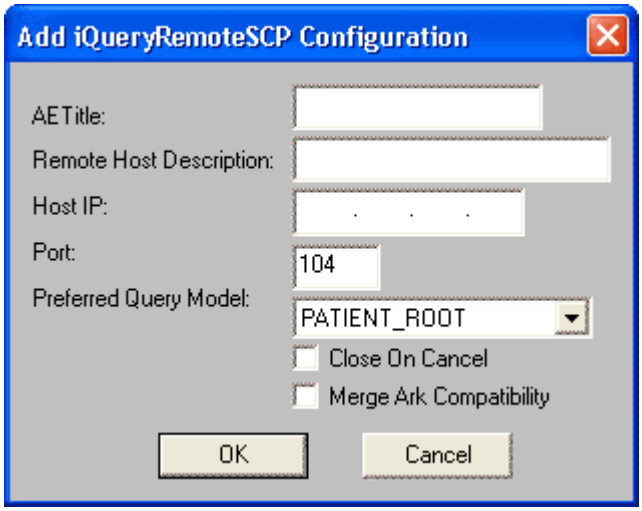

Add iExportRemoteSCP Configuration
AETitle:
W2K1850R
Remote Host Description:
W2K1850R
Host IP :
10.253.156.24
Port:
104
Max Concurrent Requests:
1
Send Entire Study On Retry
Association Across Studies
OK
Cancel

If you wish to delete a listing, highlight it and click the "Delete" button. Click the "Apply" button to make your changes permanent. The iExport destinations that you have just created or edited will be visible in the iExport dialog, which you can access via the pop-up menu in the worklists or from the exam timelines. The iExport Queue can be easily accessed by clicking the "Q" button in the iSite Control Strip.

iQuery: iQuery is the iSite mechanism that allows archived exams to be imported into the iSite Server for viewing with iSite. iQuery preferences can be added and edited. To access the iQuery preferences, click the iQuery listing from the list at left, as seen below.

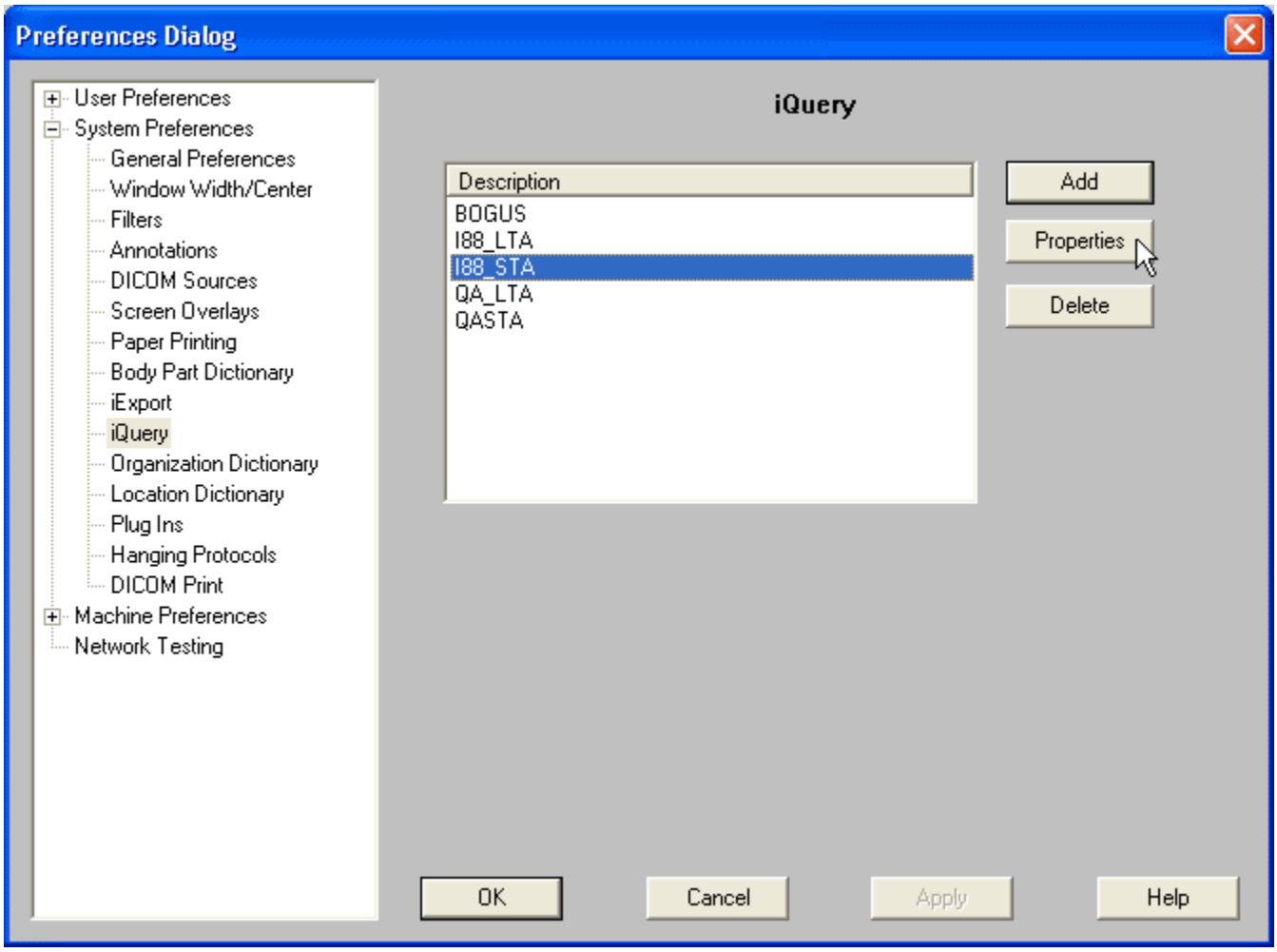


To add a new archive from which to pull exams, click the "Add" button. The following window will appear.

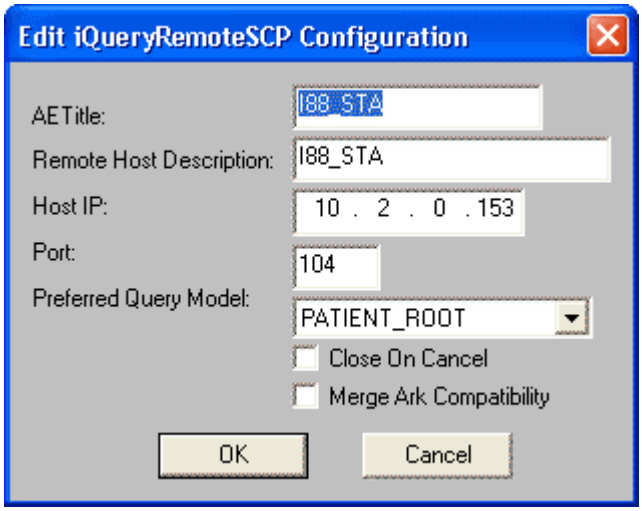


Fill in information as required and then click the "OK" button. The new archive listing will appear with the pre-existing ones.

To edit a listing, highlight that listing and click the "Properties" button, as seen below.

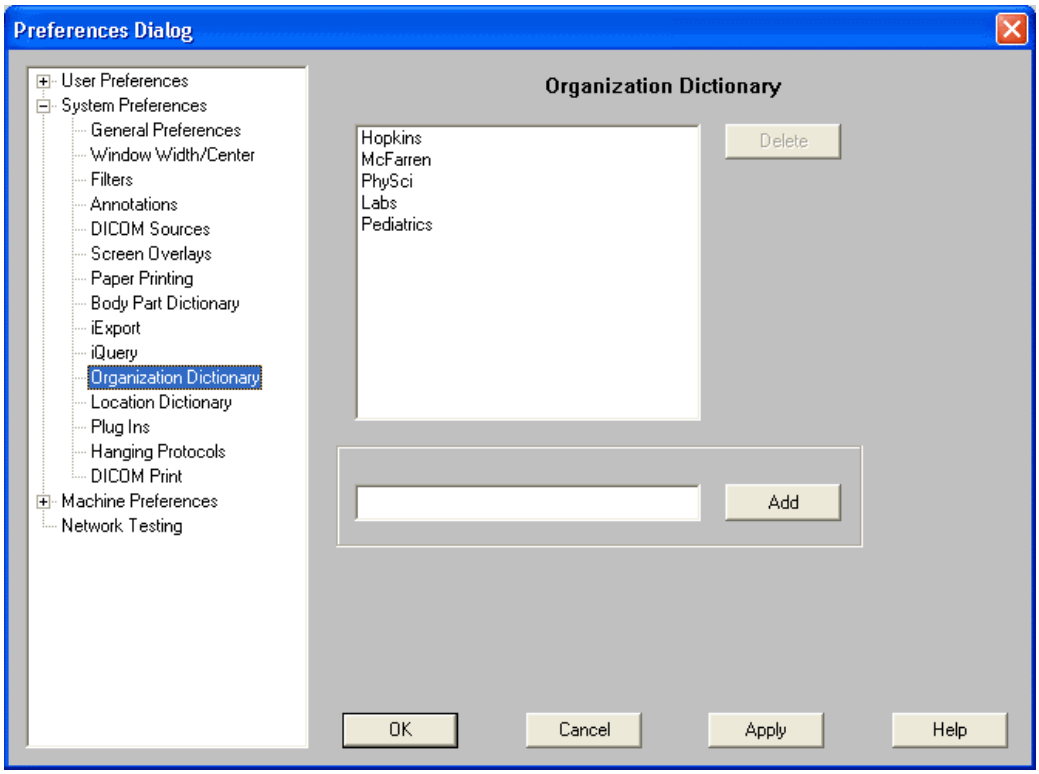


Edit information, where necessary, as seen in the window below.



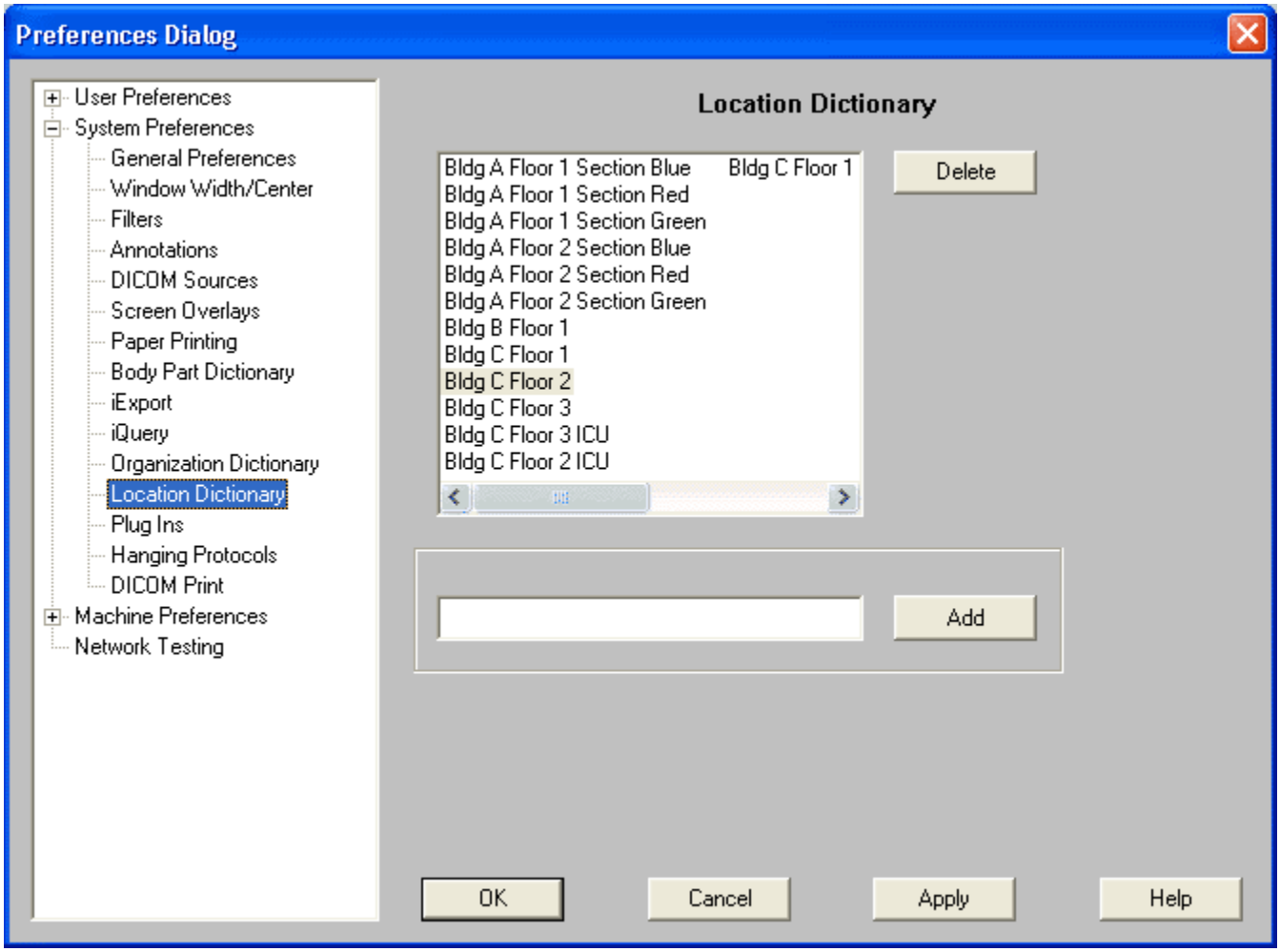
When you have completed your edits, click the "OK" button. If you wish to delete a listing, highlight that listing and click the "Delete" button. Click the "Apply" button to make your changes permanent.

Organization Dictionary: The Organization Dictionary lets you specify the various organizations present in your institution, if you use "organization" in your exam records. The listings are then used for the purposes of exam searches. These names listed in this dictionary must match the information coming from your institution's HIS/RIS system. To access the Organization Dictionary, select its listing from the System Preferences pull-down list, as seen below.



To add an organization to the Dictionary, simply type the name in the bottom field and click the "Add" button. The organization will be added to the list above. To remove an organization, click the listing and then the "Delete" button.

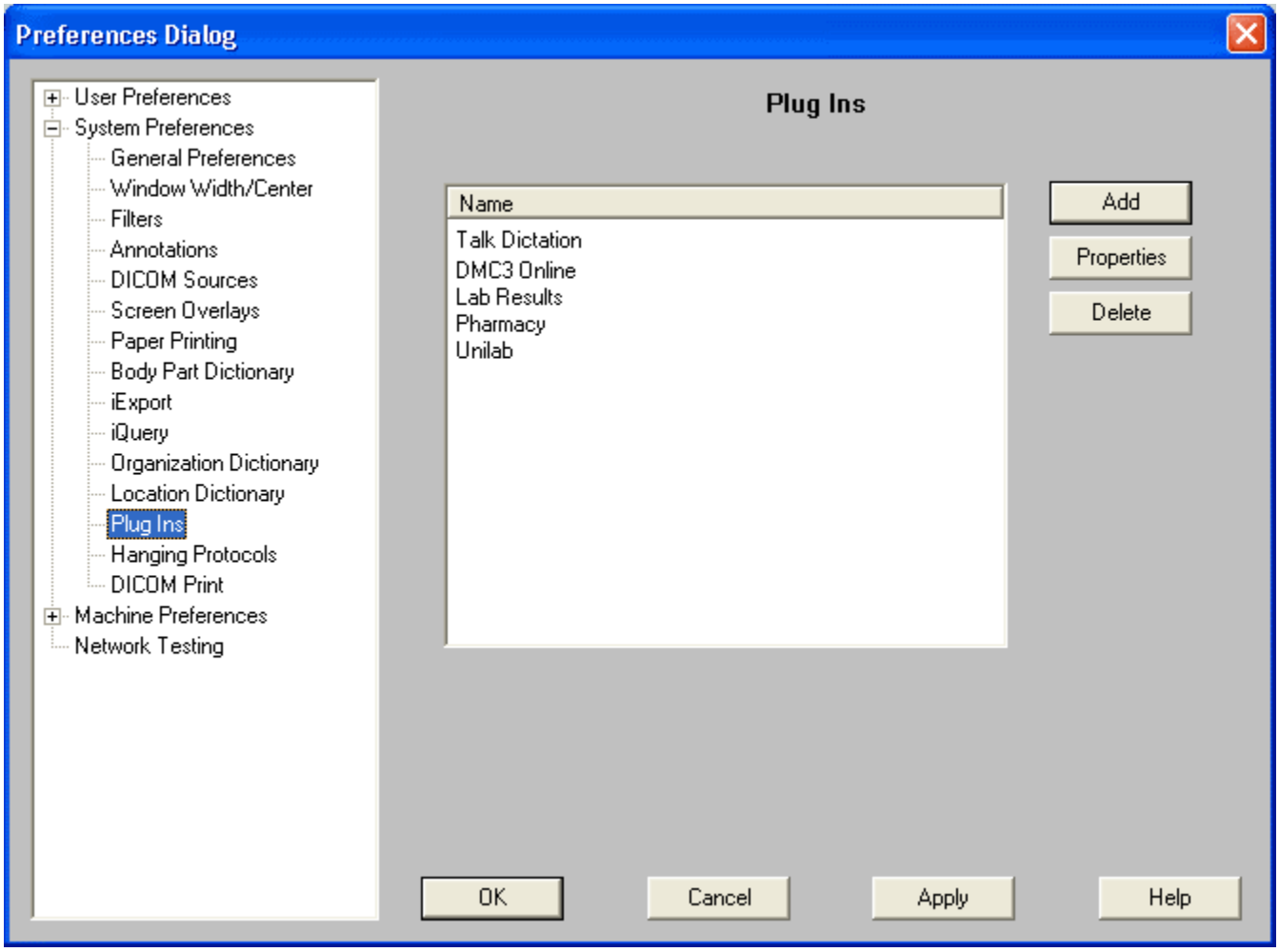
Location Dictionary: The Location Dictionary allows you to specify the various locations present at your institution, if you use "location" in your exam records. The listings are then used for the purposes of exam searches. The names listed in this dictionary must match those present in your HIS/RIS system exactly for searches to work correctly. To access the Location Dictionary, select its listing from the System Preferences pull-down list, as seen below



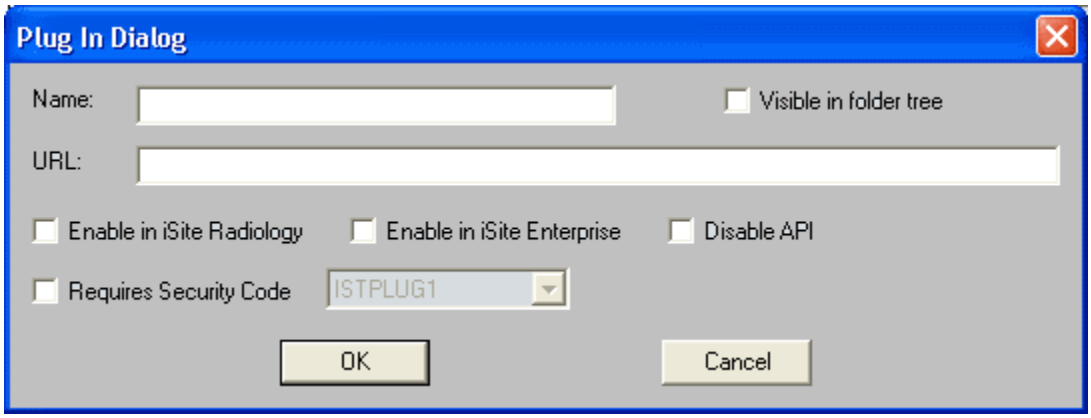
To add a location to the Dictionary, simply type the name in the bottom field and click the "Add" button. The location will be added to the list above. To remove a location, click the listing and then the "Delete" button.

Plug Ins: The Plug Ins preferences allow you to create links in the iSite Folders List and the iSite Shortcuts that point to other web interfaces or websites. For example, if your institution's lab results are available from an in-house server, you can display that server's interface in iSite by creating a Plug In. The preferences dialog allows you to name the Plug Ins, enable them in different iSite programs and set security codes for

them, if necessary. To access the Plug Ins, select its listing from the System Preferences pull-down list, as seen below.



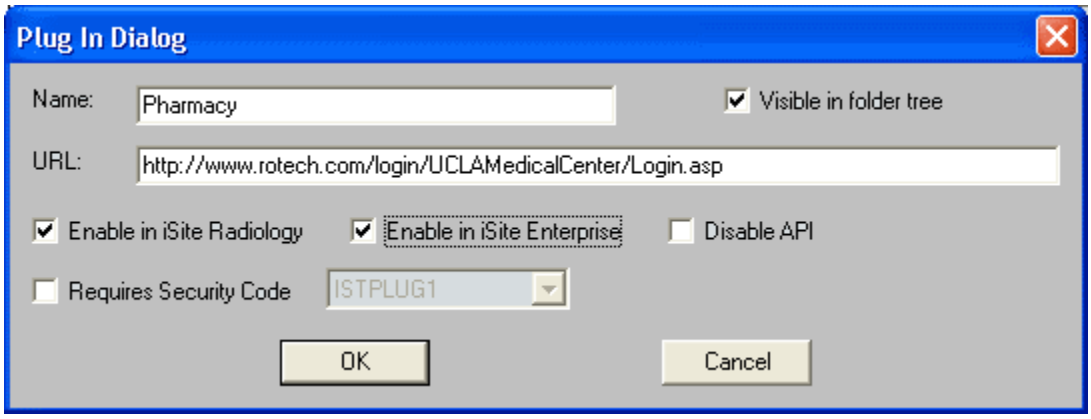
To add a new Plug In click the "Add" button. The following window will appear.



Choose a display name for the Plug Ins folder and then set whether it will be displayed in the folder tree. If it is not, it will not be visible to non-administrative users. For information about using the Plug Ins with API's, please see the iSite API documentation. Enter the URL of the Plug In and then choose the programs in which to enable the

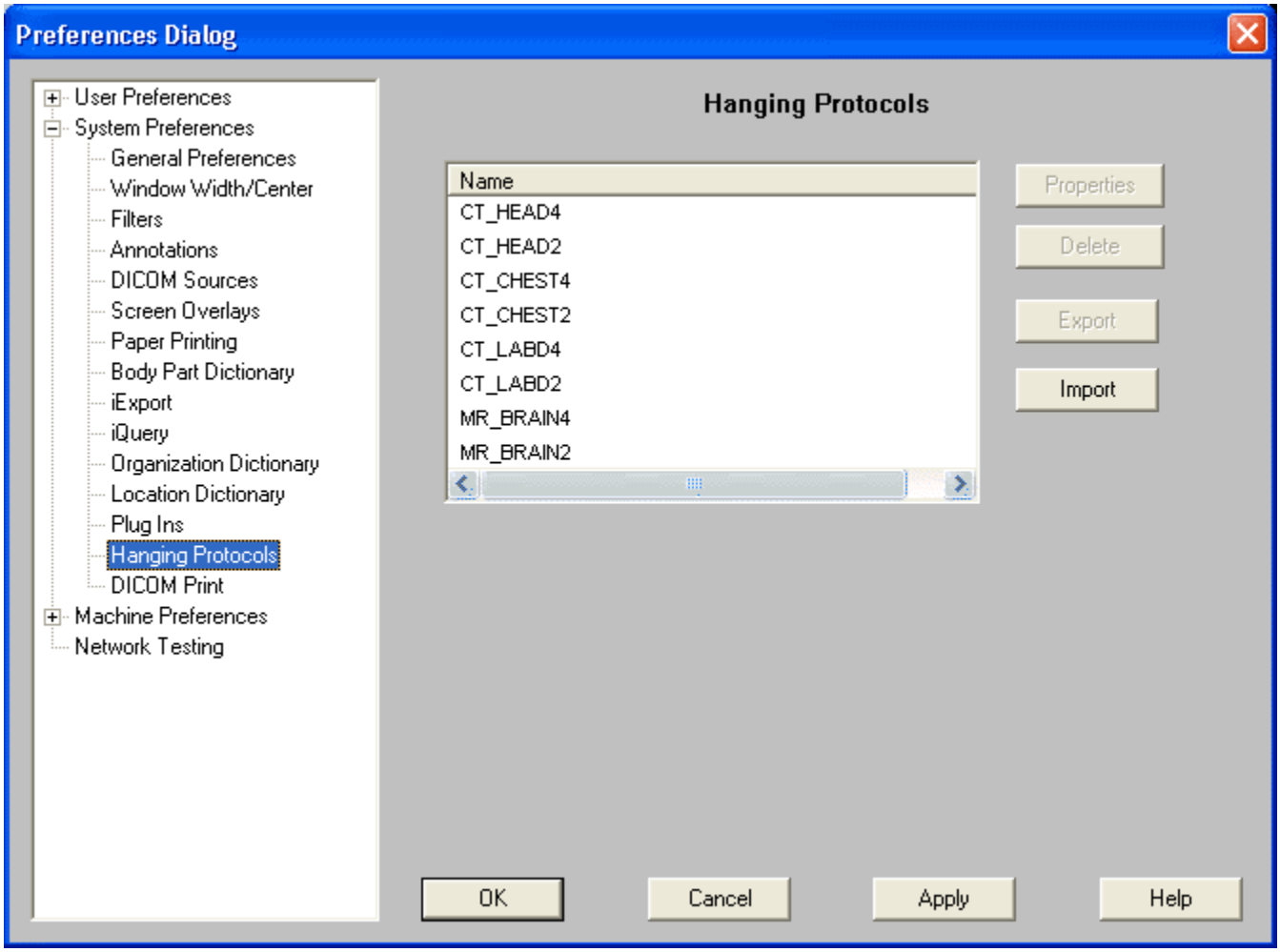
Plug-In. If you would like only users with a specific Security Code to be able to access the Plug In, select the "Require Security Code" box and chose the Security Code from the drop down menu.

To edit an existing Plug In, simply highlight that listing and click the "Properties" button. Edit information, where necessary, as seen in the window below.

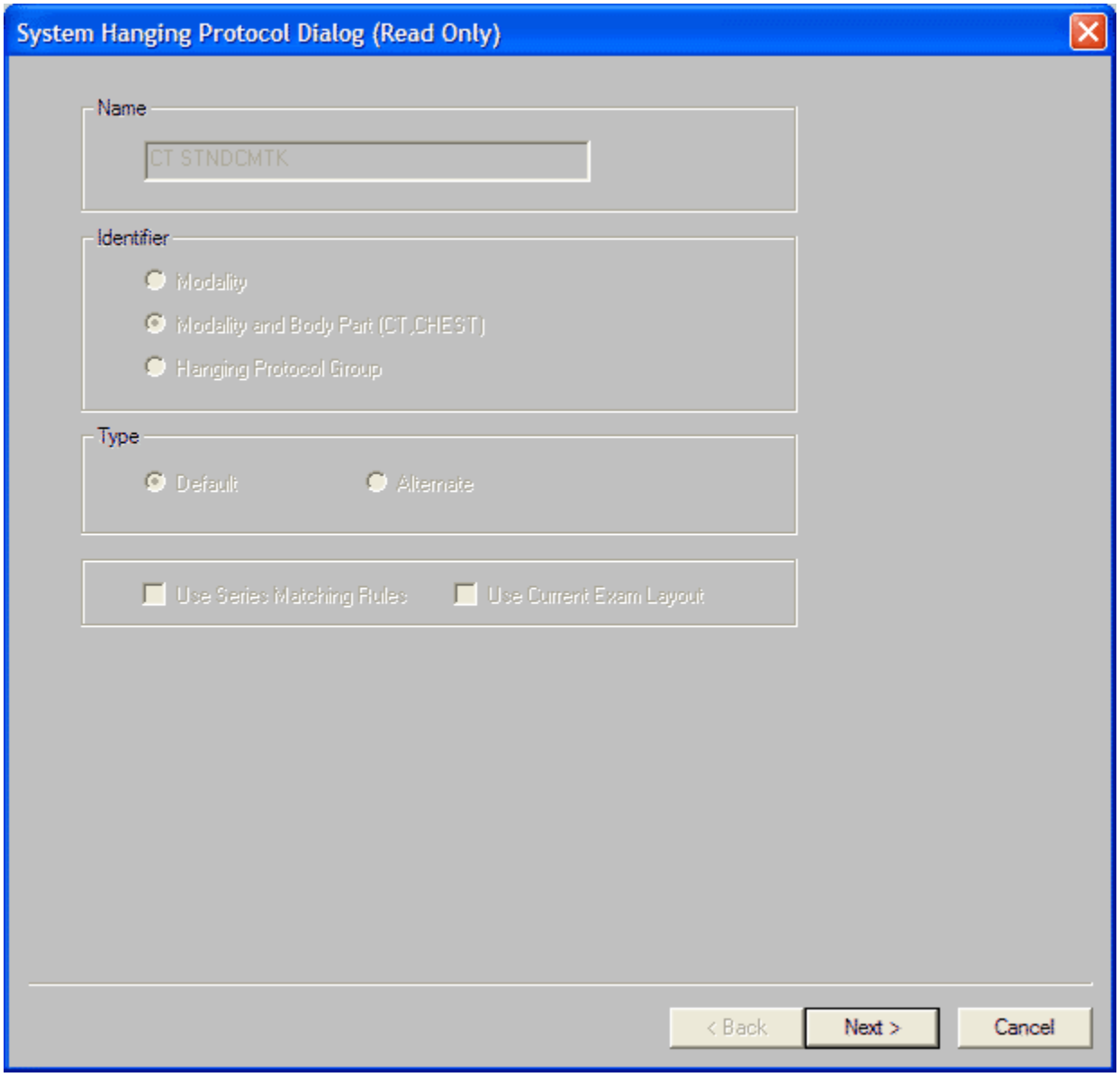


To delete a Plug In, highlight the listing and click the "Delete" button.

Hanging Protocols: Hanging Protocols are created and edited from within the iSite Radiology Canvas Page. The hanging protocol preferences area allows you to view the iSite Radiology Hanging Protocols and to delete them if necessary. To access the Hanging Protocol Preferences, click that listing, as shown below.



To view the properties of a hanging protocol, highlight the appropriate Hanging Protocol and click the "Properties" button. The following window will be displayed.

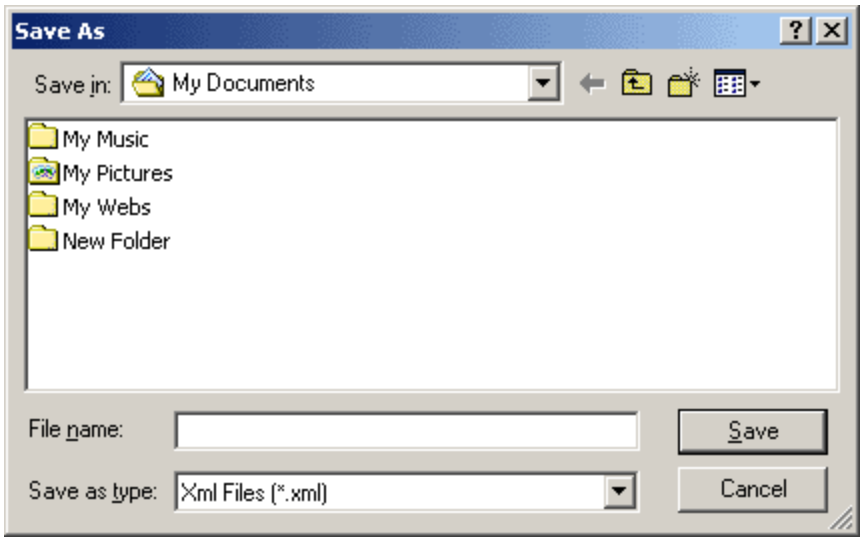


By clicking the "Next>" button you can visit all of the subsequent windows of the Hanging Protocol properties. All of these windows are Read Only and cannot be edited from the Preferences page. Hanging Protocols must be edited from within the iSite Radiology canvas page.

To delete a Hanging Protocol from the system, highlight that Protocol's listing and click the "Delete" button.

If you are finished reviewing and/or editing your personal preferences, click the "OK" button.

If you wish to export a Hanging Protocol listing, select the desired Hanging Protocol and click the "Export" button. The following dialog will appear.



Choose a name for the exported file and click the "Save" button. The file will be saved in .xml format in the chosen directory.

If you wish to import Hanging Protocol listings, click the "Import" button. Choose the desired .xml format file and click the "Open" button.

Please note that the following rules apply to Importing Series Matching Rules:

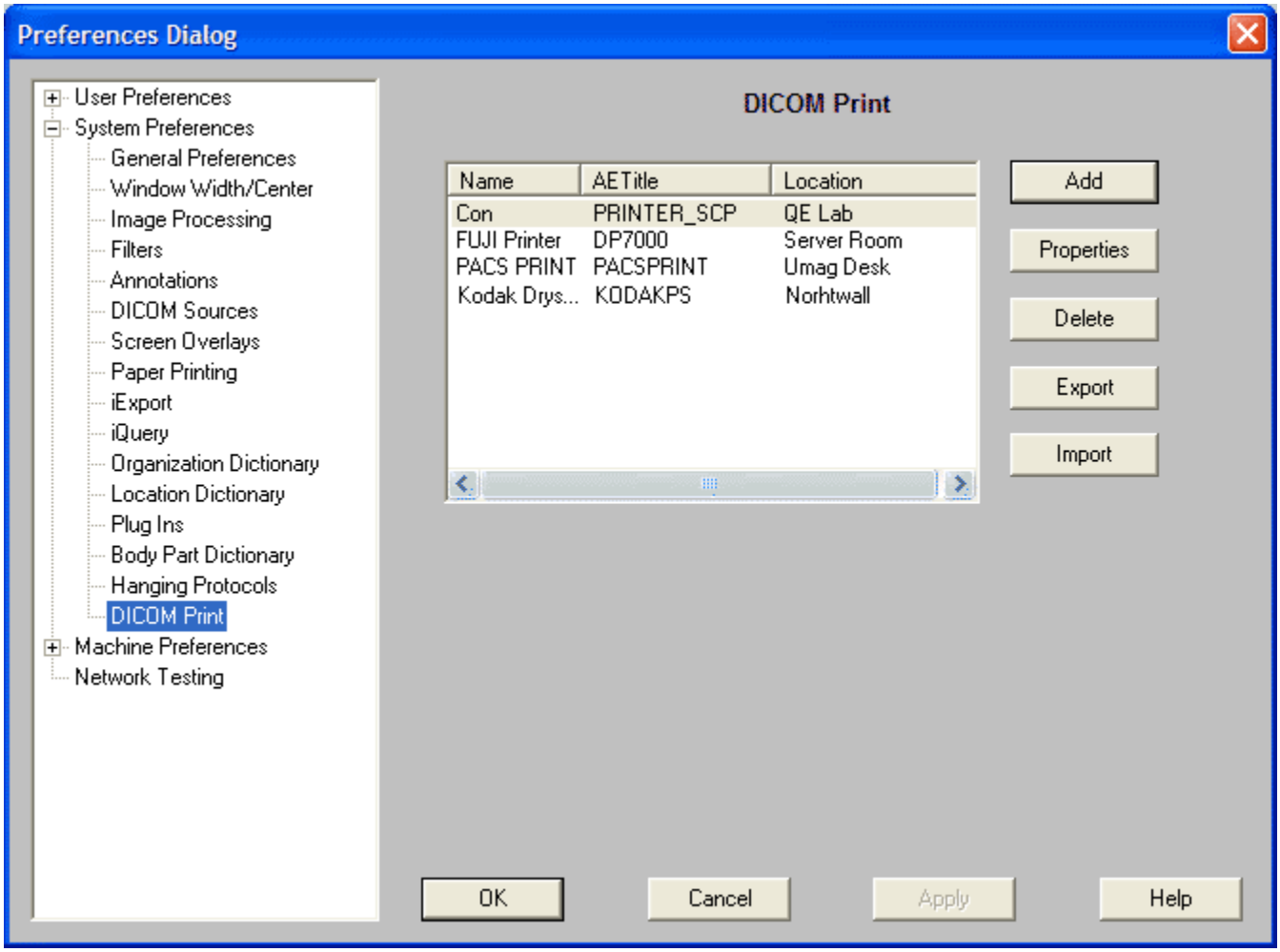
1. If the Series Matching Rule is unique (name, attributes, values), it will be imported as new.

2. If the Series Matching Rule has a duplicate name and comprises a duplicate set of attributes and values, it will not be imported.

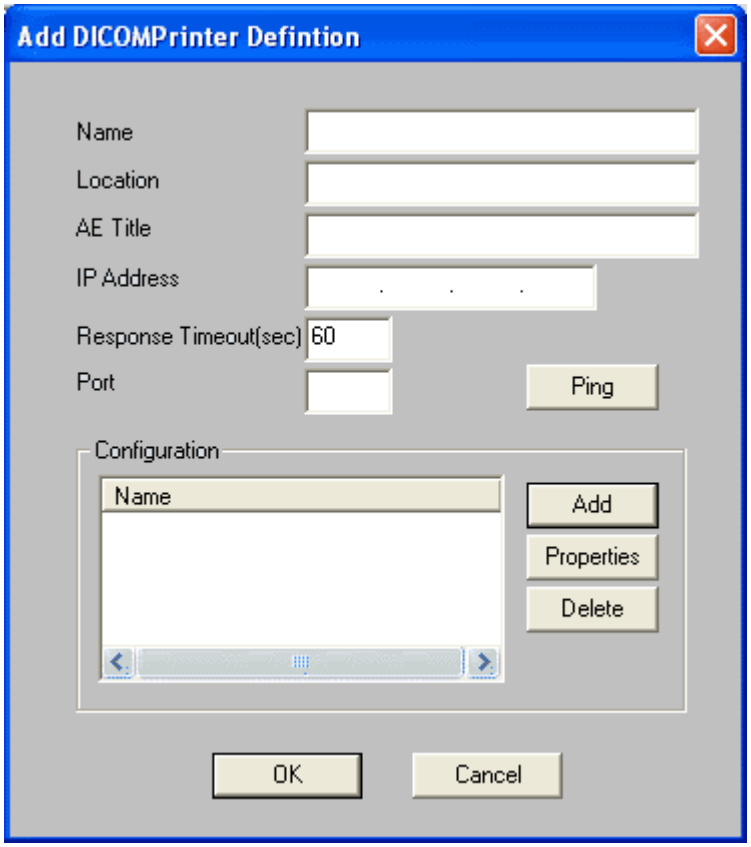
3. If the Series Matching Rule has a duplicate name, but it is unique (i.e. distinct attributes with distinct values), the Rule will be imported and the "import" prefix will be added to its name.

DICOM Print: The DICOM print option allows you to control the printers to which exams and images will be printed. Please note, to properly configure and validate your DICOM Print settings, you will need to obtain information and assistance from the printer vendor. Additionally, images that have an Image Processing Filter applied to them cannot be printed to a DICOM device.

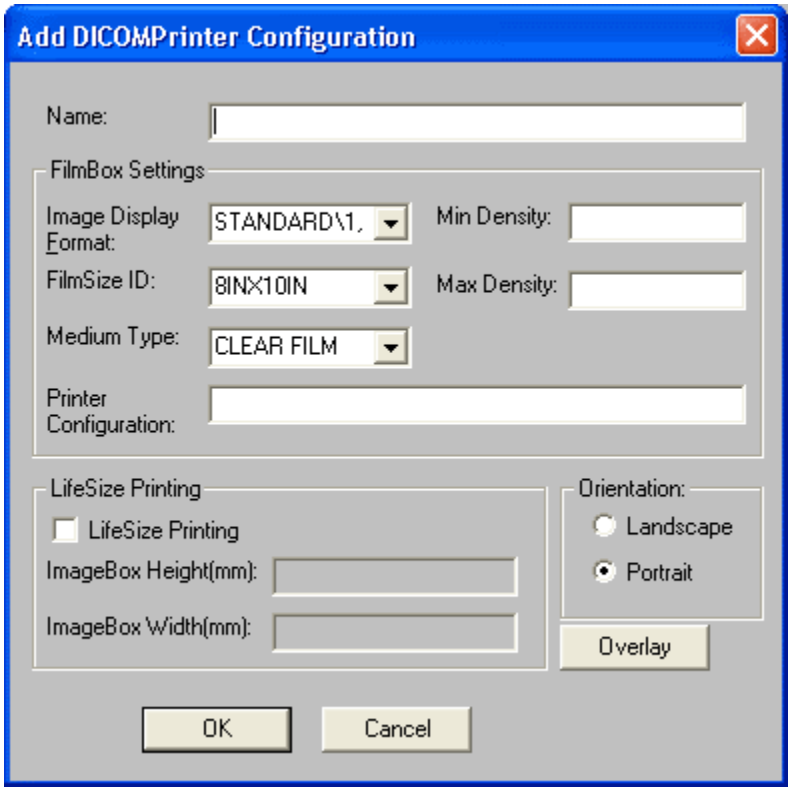
To access these options, click the "DICOM Print" listing from the tree view control. The following screen will be displayed.



To add a new DICOM printer destination, click the "Add" button. The following dialogue will appear.

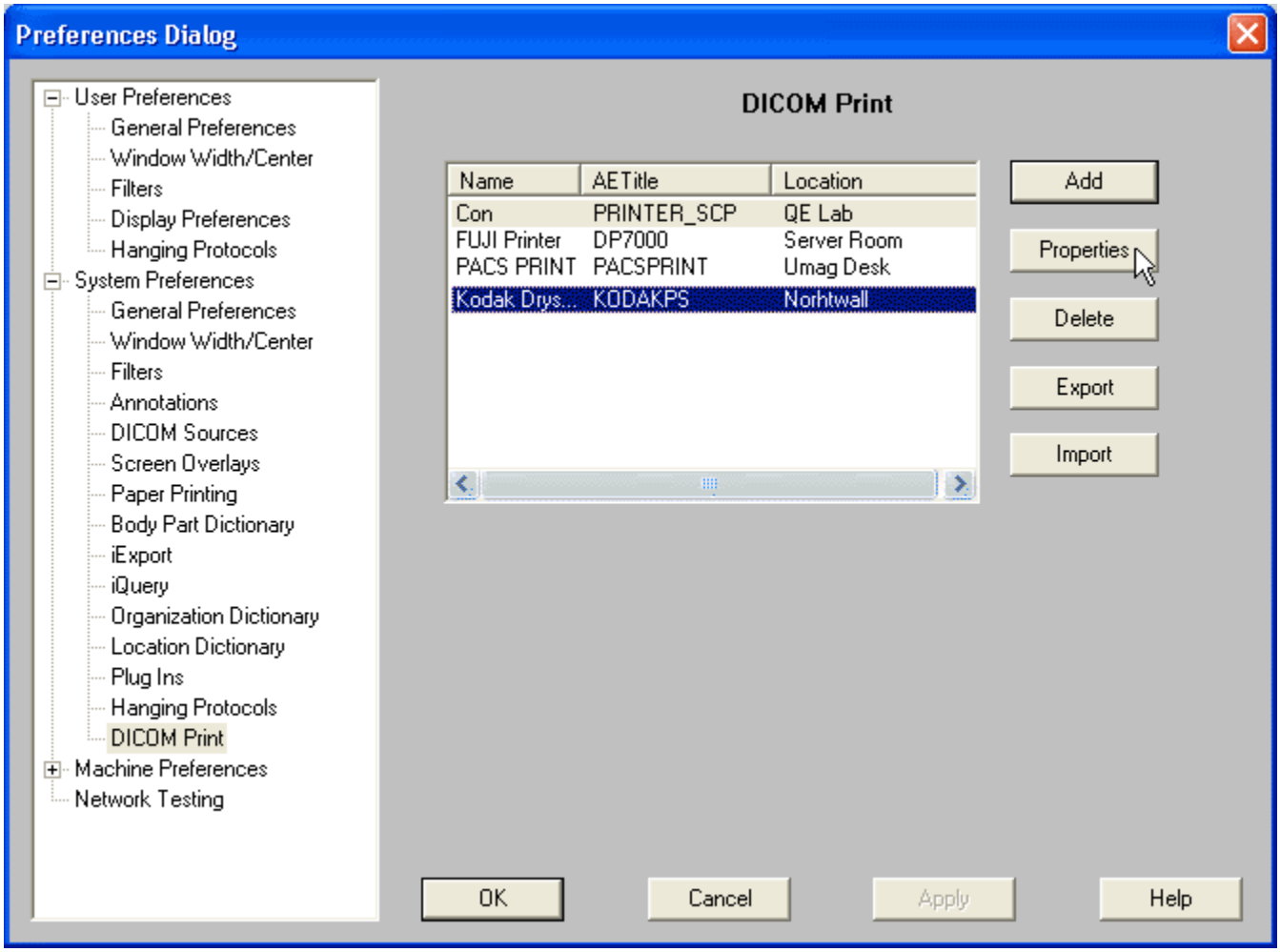


Fill in the name, location, AE Title, IP Address and Port of the printer. To configure the printer you have just added, click the "Add" button in the "Configuration" dialog. The following screen will appear.

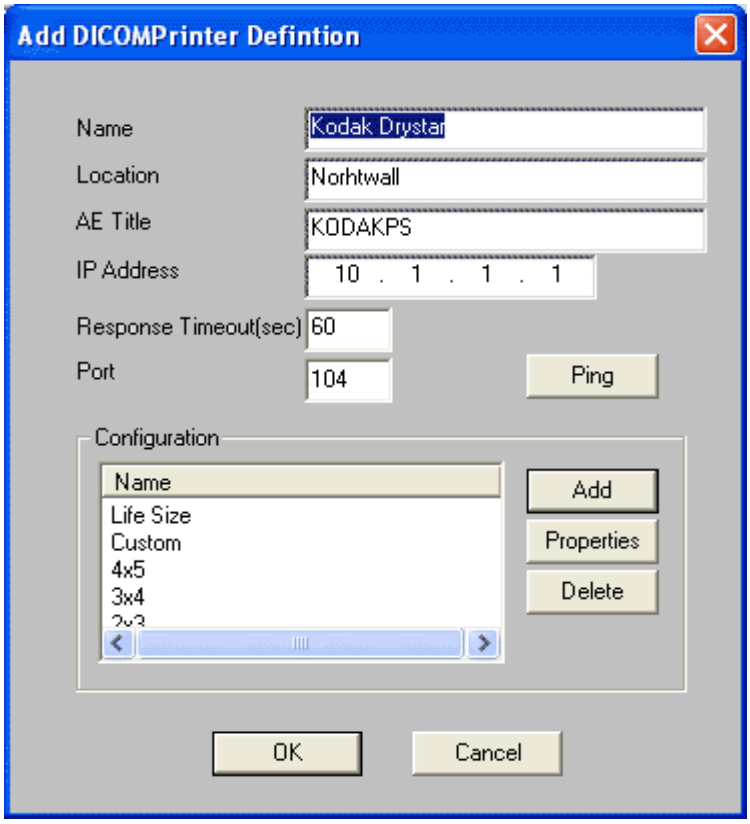


The Add DICOMPrinter Configuration dialog, seen above, allows you to specify a number of FilmBox settings as well as LifeSize Printing and general orientation choices. Fill in the configuration information obtained from the printer vendor and click the "OK" button to return to the "Add DICOM Printer" screen. Once there, verify the information that you entered and click the "OK" button to save your entry. The new printer listing will be displayed in the Preferences DICOM Print screen.

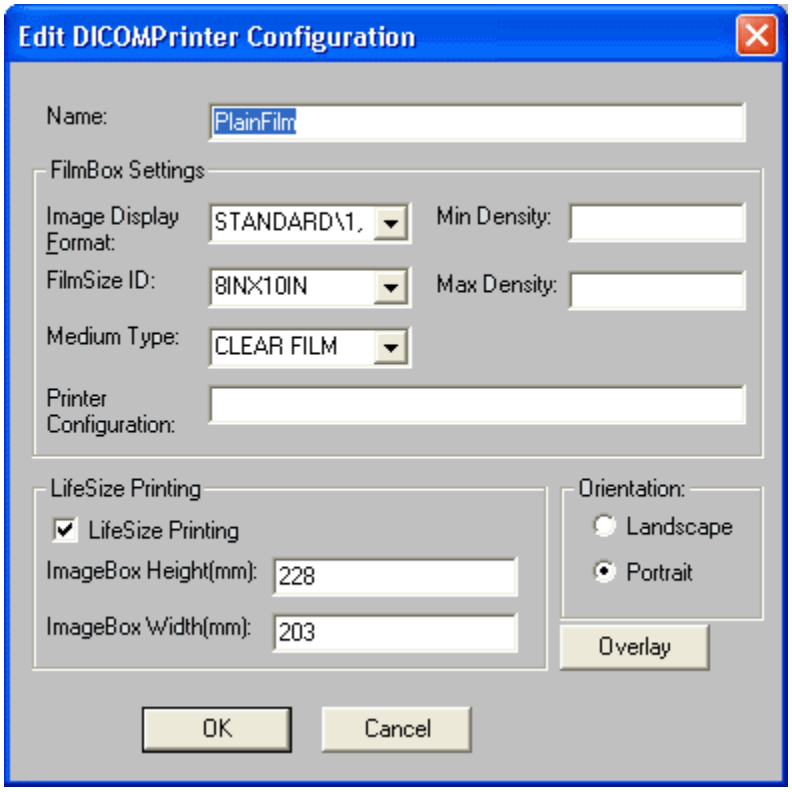
To edit an existing printer listing, highlight that listing and click the "Properties" button, as seen below.



The properties of that DICOM printer will be displayed in the subsequent window, seen below, and can be edited as necessary.

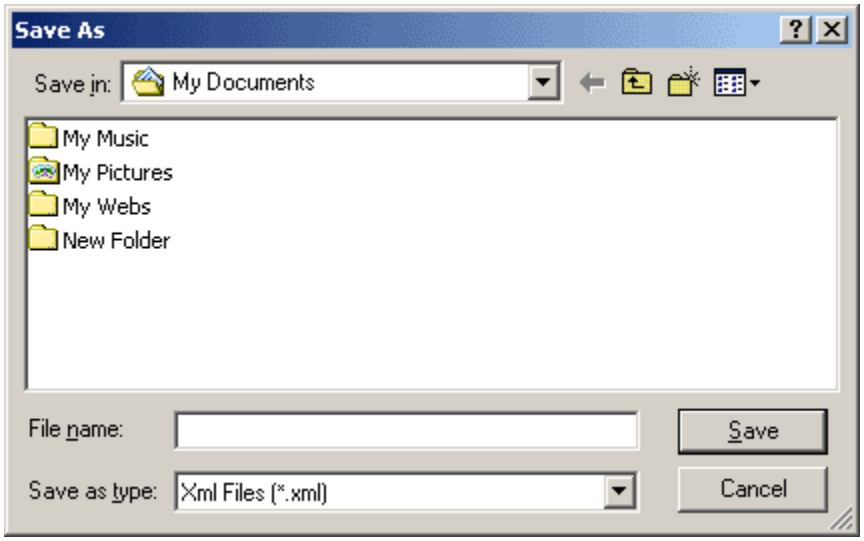


In this window, you can also edit a DICOMPrinter configuration by highlighting a listing and clicking the "Properties" button. The following window shows a sample configuration. For Lifesize Printing, you will need to obtain the correct Image Box Height and Width settings from the printer vendor.



Make changes as necessary. Once back in the Edit DICOMPrinter Configuration window, click the "OK" button to return to the Edit DICOM Printer Definition dialog. When you have finished editing the DICOM printer properties, click the "OK" button to save your changes.

If you wish to export a DICOM Printer listing, select the desired DICOM Print and click the "Export" button. The following dialog will appear.



Choose a name for the exported file and click the "Save" button. The file will be saved in .xml format in the chosen directory.

If you wish to import DICOM Printer listings, click the "Import" button. Choose the desired .xml format file and click the "Open" button.

Please note that if you import a DICOM Printer that has the same name as an existing System DICOM Printer, you will be prompted to rename the imported DICOM Printer. Imported DICOM Printers will always be listed as "Alternate".

DICOM printers can be removed by highlighting the printer listing and clicking the "Delete" button.

Setting Up DICOM Print

Warning: Considerations for Life-Size Printing

- Philips strongly recommends that you ask for assistance from your printer vendor when configuring the Life Size printing option for a specific printer, and that you validate the correctness of the configuration by verifying that the Life Size Print option is indeed printing life-sized, after completing the configuration.

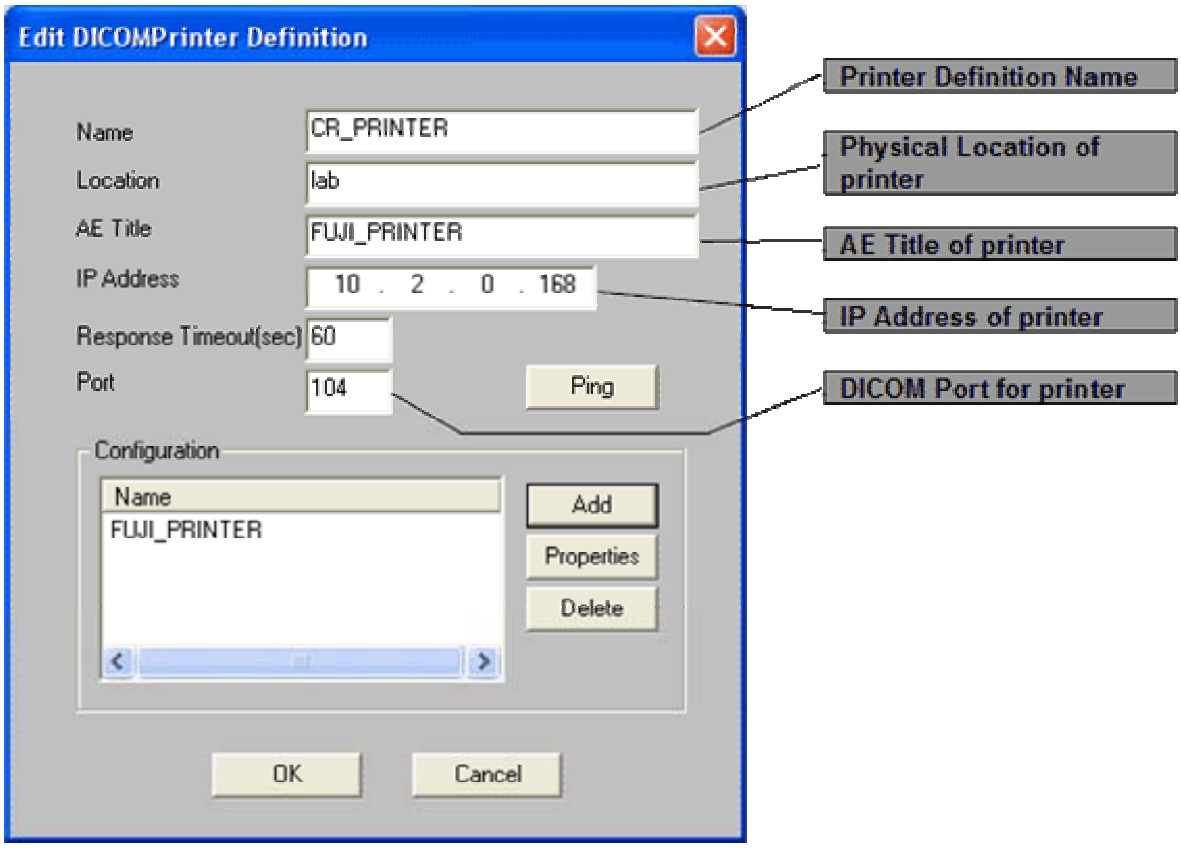
- Due to the inherent nature of projection radiography, when using iSite for measurement or life-size printing, Philips strongly recommends the use of an appropriately placed object of known size for determining what magnification factor has been applied to the image.

The following screen shots contain sample data. The data for your specific print setup must be obtained from your printer vendor(s).

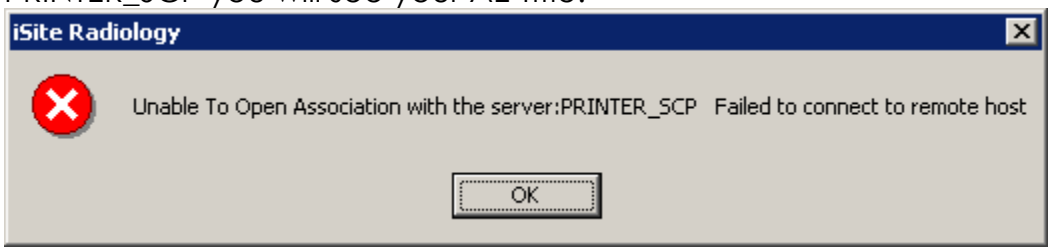
1. Log on to iSite Radiology. Click on the "P" (Preferences) icon in the right top corner of the screen. The Preferences Dialog will be displayed.

2. Navigate to System Preferences\DICOM Print and click Add. The Add DICOM Printer Definition dialog opens.

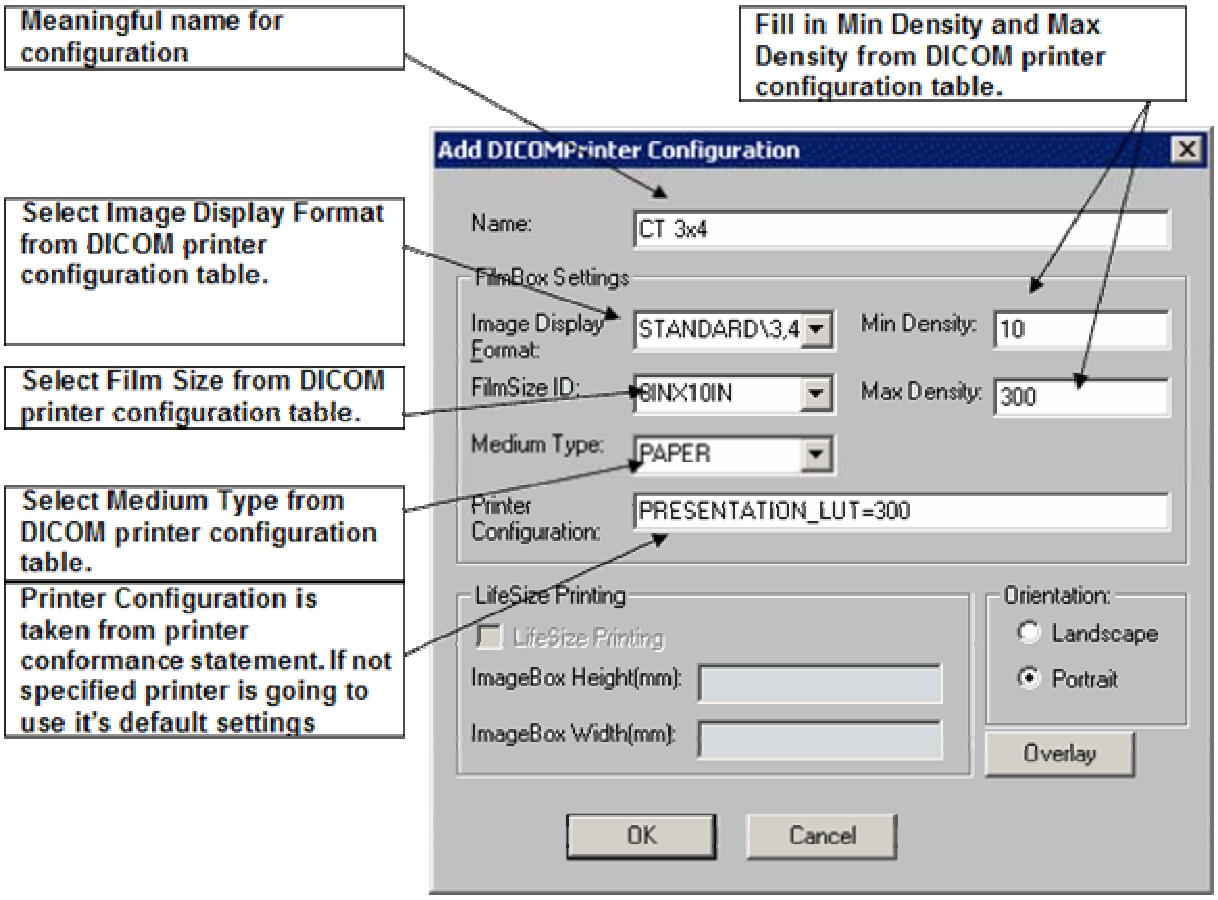
3. Fill in all the fields as shown in the following example. Note that the AE Title is case-sensitive.



4. After you fill in all the fields, click the Ping button to test communication with the printer. If the communication is good, the printer should return "Ping to the Server is Successful" message. If you mistype AE Title, IP, Port, or there is not physical (IP) connectivity between the Radiology Workstation and the Printer, an error message will display, similar to the example below -- only instead of PRINTER_SCP you will see your AE Title.



5. After communication with the printer has been established, click the Add button to add new configuration. The Add DICOM Configuration dialog will display.



6. You can choose to use life size printing by checking the Life Size Printing check box.

    - iSite can be configured (on a printer-by-printer basis) to enter the maximum printable height and width of the film (information to be provided by the printer vendor).

    - iSite will do the rendering before sending the image to the printer.

      *Based on the modality type defined in DICOM header, iSite will either use the DICOM data-element (0028,0030), with the attribute description of "Pixel Spacing" or DICOM tag (0018,1164) with the attribute description of "Imager Pixel Spacing".

    - iSite will use the tags as mentioned above together with the maximum printable height and width as provided in millimeters to render the image, and if necessary adapt the number of rows and columns to match the capability of the printer. When this is done, the image will be sent to the printer.

- Using the information provided by the printer vendor, please enter values in millimeters for the ImageBox height and ImageBox width based on the desired Orientation, Landscape or Portrait.

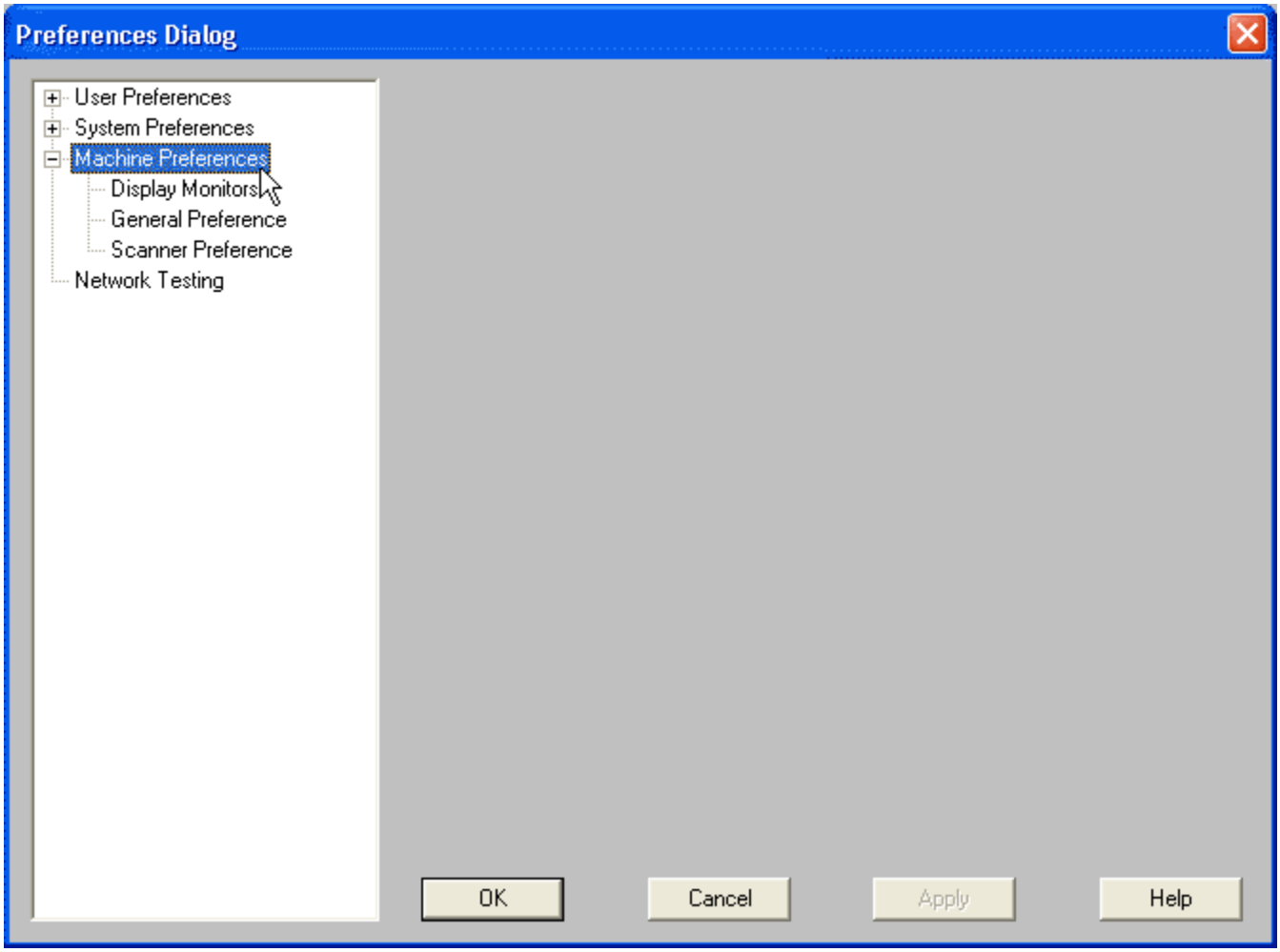
- When the films are printed, they will display a tag that reads "iSite Life Size Print" in the upper left-hand corner above the screen overlays.

- Please note that iSite maintains and audit trail of all life-size prints.

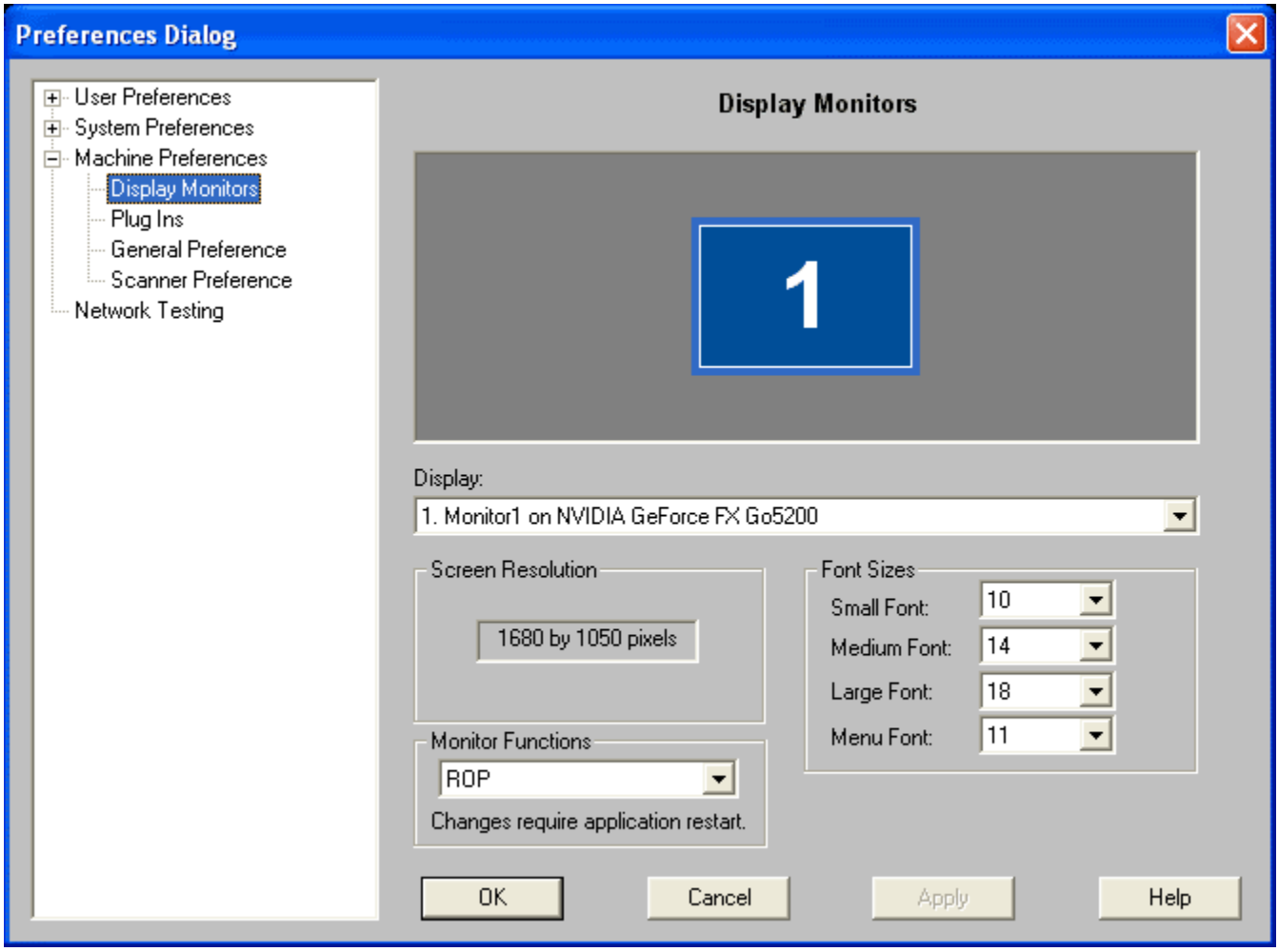
7. When you have entered the necessary information in the fields, set the Orientation.
8. You need to add separate configurations if you intend to print images from multiple modalities, or if the same modality uses different image display formats, film sizes, or medium types.

Machine-specific Preferences

iSite allows you to set preferences for the machine that you are currently working on. These preferences are limited to personnel with administrative privileges only. To view these options, click the "Machine" listing in the tree view control at left, as shown below.



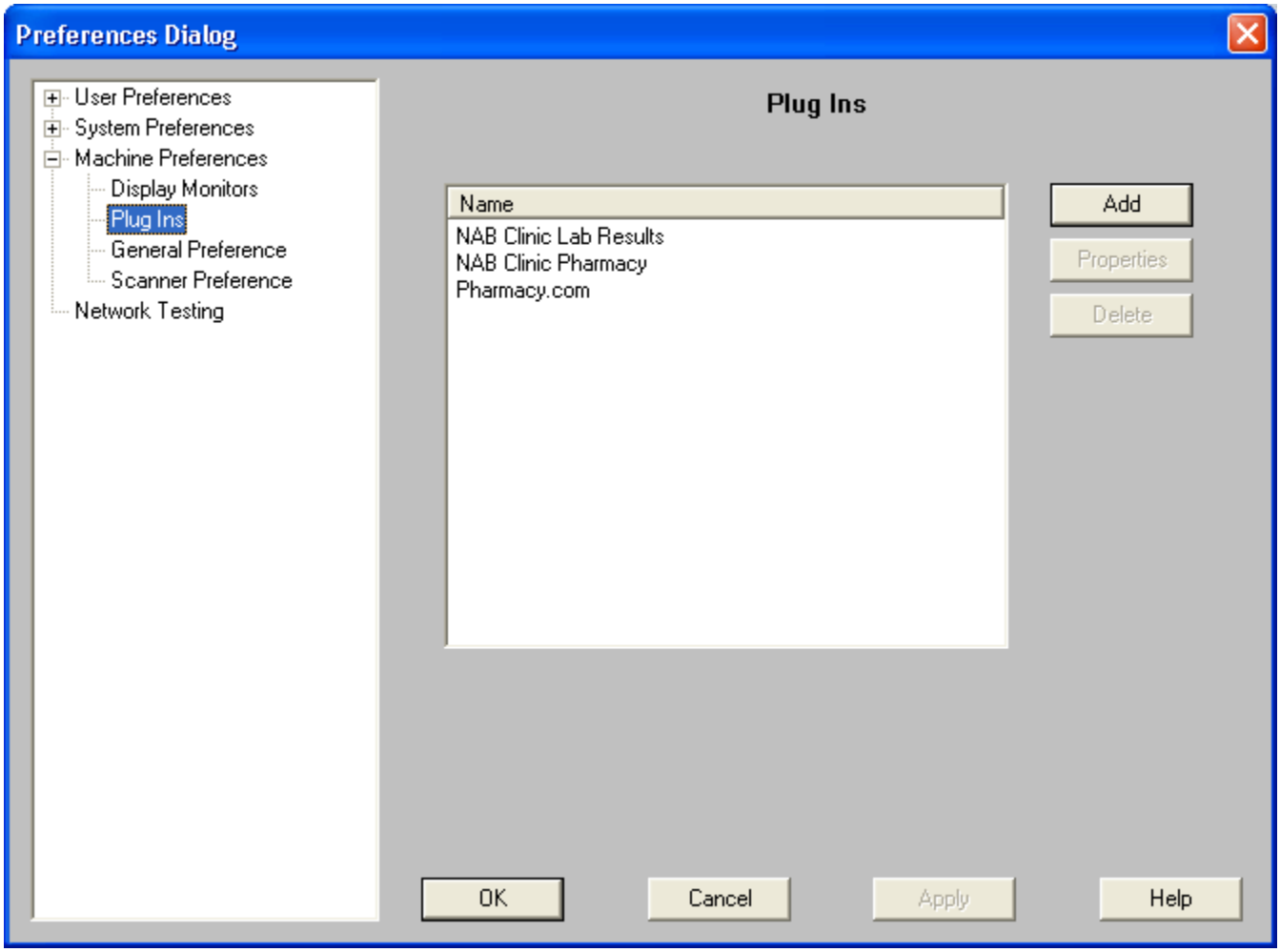
Display Monitors: To access the Display Monitor preferences, click the "Display Monitors" listing at left, as seen below.



If you are using more than one monitor, pull down the "Display" menu to reveal additional monitors. The monitor listed is the one for which the settings will apply. The Screen Resolution of the monitor is displayed at left. In the Font Sizes menu you can control the size of the fonts displayed on your monitors and in pop-up menus. To designate a monitor as your Navigation Console, highlight that monitor and select "ROP" from the Monitor Functions pull-down menu at bottom left.

Machine-level Plug Ins: Plug Ins can be created for an individual machine for integration purposes, such as a Voxar dongle. While this feature is only available for System Administrators, it provides a higher level of granularity in setting up iSite on a specific machine.

To access the Machine-level Plug Ins, click that listing from the Machine Preferences sub-menu, as seen below.



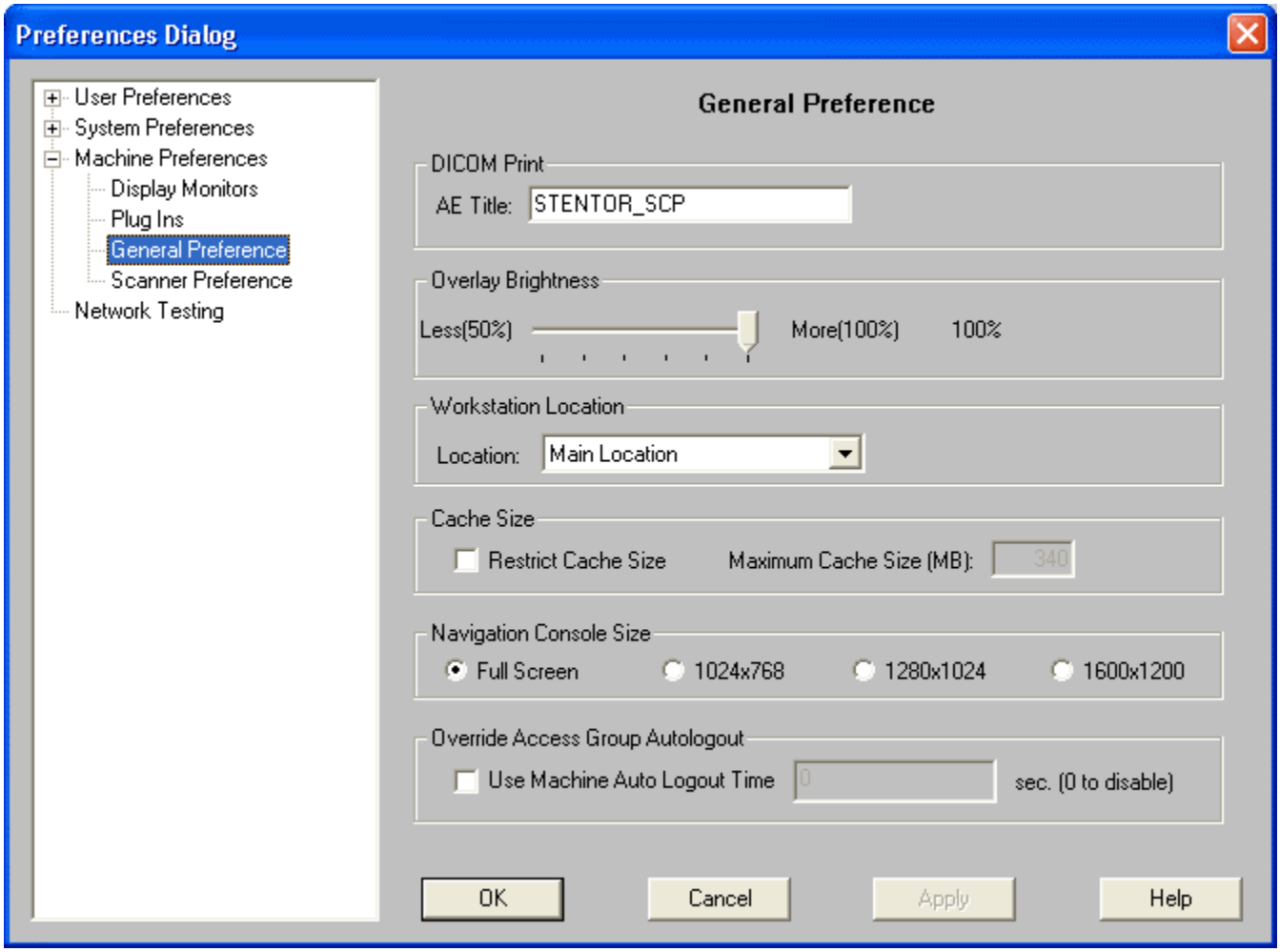
To add a new Plug In click the "Add" button. The following window will appear.

Choose a display name for the Plug Ins folder and then set whether it will be displayed in the folder tree. If not, it will be invisible to non-administrative users. For information about using the Plug Ins with APIs, please see the iSite API documentation. Enter the URL of the Plug In and then choose the programs in which to enable the Plug-In. If you would like only users with a specific Security Code to be able to access the Plug In, select the "Require Security Code" box and chose the Security Code from the drop-down menu.

To edit an existing Plug In, simply highlight that listing and click the "Properties" button. Edit information, where necessary, as seen in the window below.

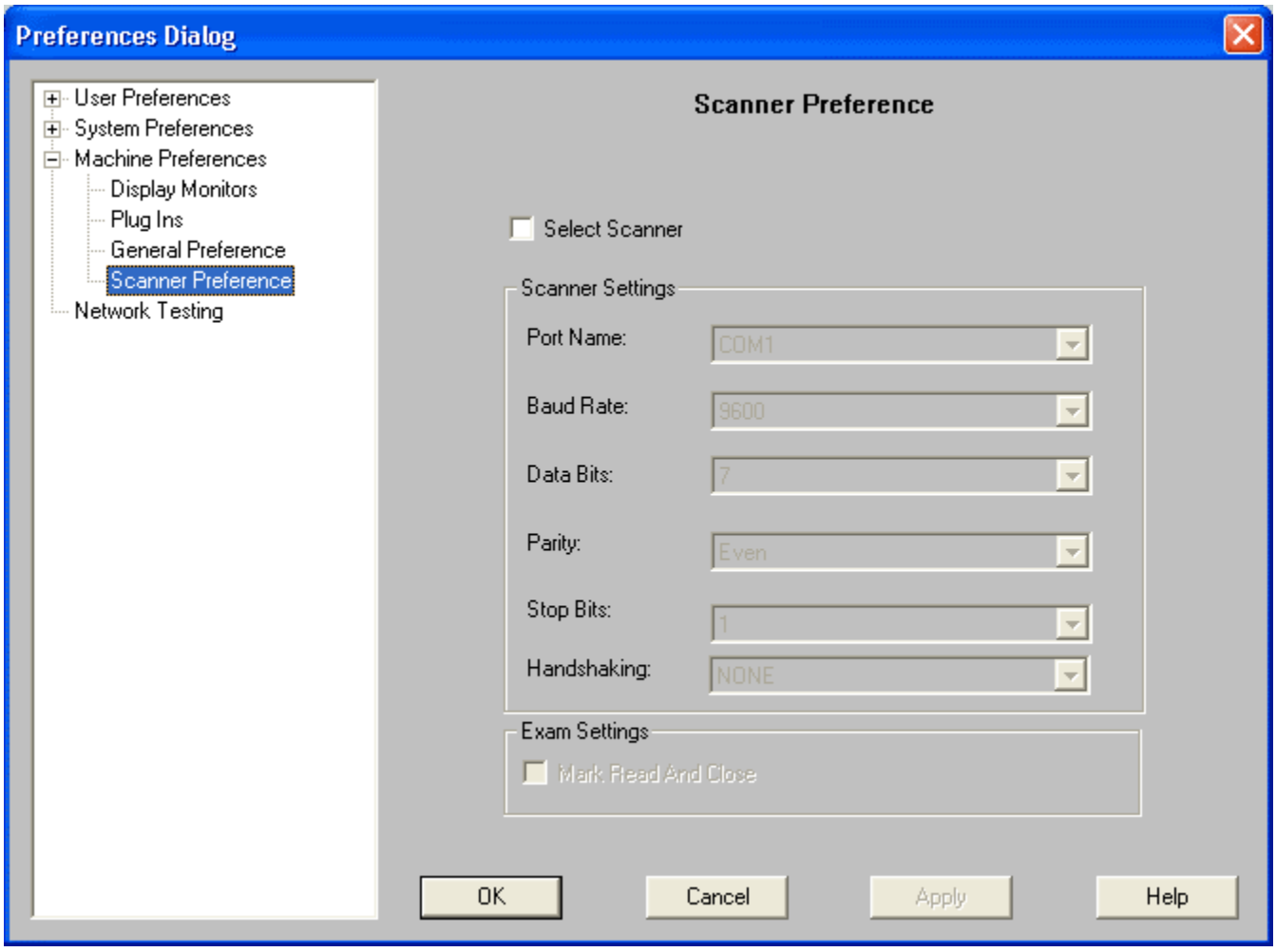
To delete a Plug-in, highlight the listing and click the "Delete" button.

General Machine Preferences: To view the General Machine Preferences, click the "General Preferences" listing, as seen below.

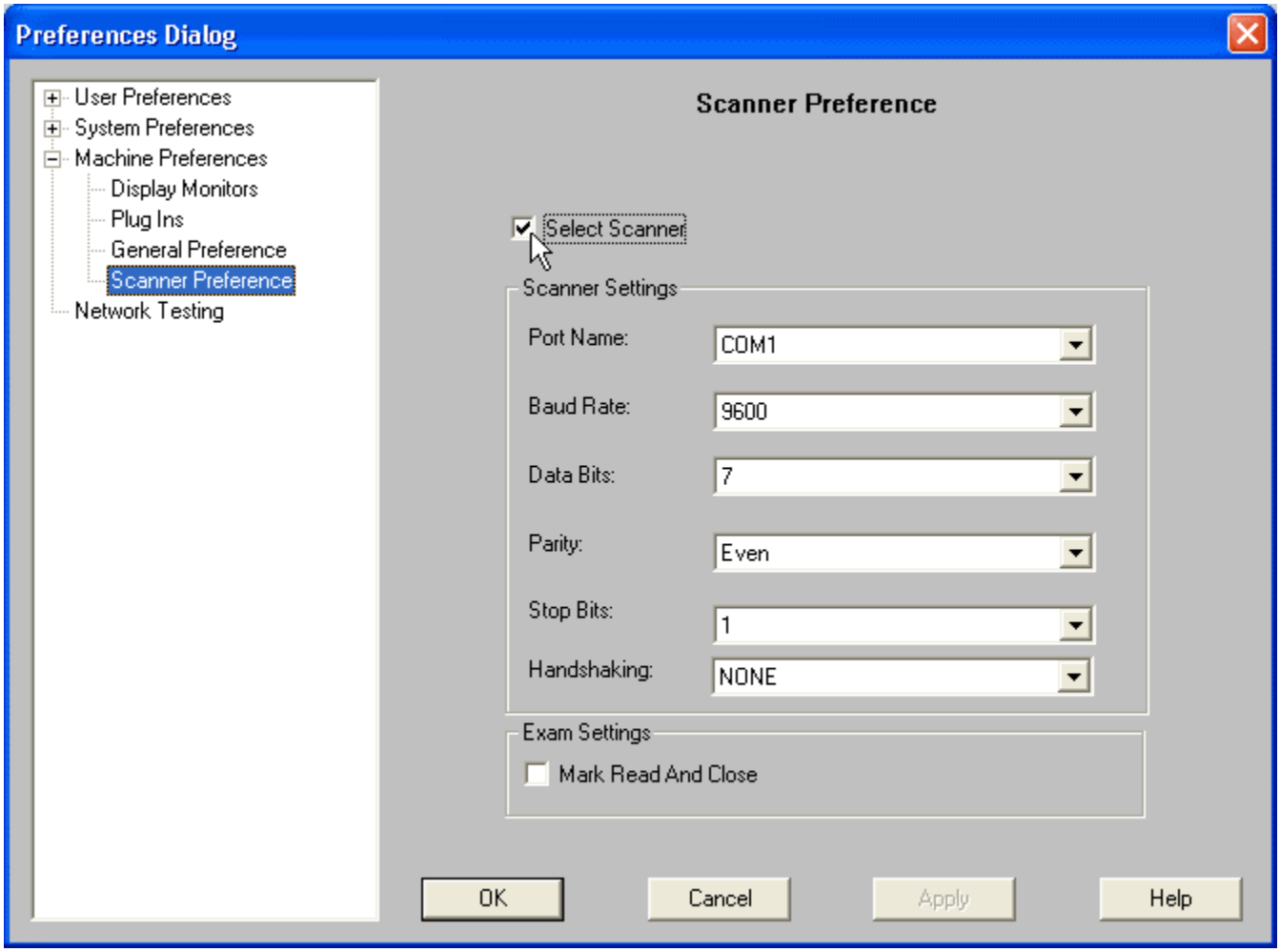


In the AE Title field, enter the AE title that you wish iSite to have. This title can have up to seven letters, all in capitals (Philips_SCP, for example). The Debugging option lets you decide how error messages should be handled. The Overlay Brightness option allows you to set how bright the textual information presented with diagnostic images will be. To designate the location of this machine, as seen in the login dialog, select the desired default location from the pull-down menu. If you are running a secondary application validated by Philips, such as VOXAR, and you wish to adjust your machine's cache size, please contact your iSite System Administrator. The Navigation Console Size can be adjusted below. If you need to override the Access Group-based Auto Logout times for your institution on this machine, you can set a machine-specific auto-logout time in the "Override Access Group Auto Logout" dialog. This time is set in seconds. If you do not want the machine to auto-logout, enter "0" for the auto-logout time.

Scanner Preferences: To access the Scanner Preferences, click the "Scanner Preferences" listing at left, as seen below.



The scanner preferences allow you to add and configure a bar-code scanner if your institution uses them for reading exams. To add a bar-code reader, click the "Select Scanner" checkbox, as seen below. This enables the Scanner Settings.

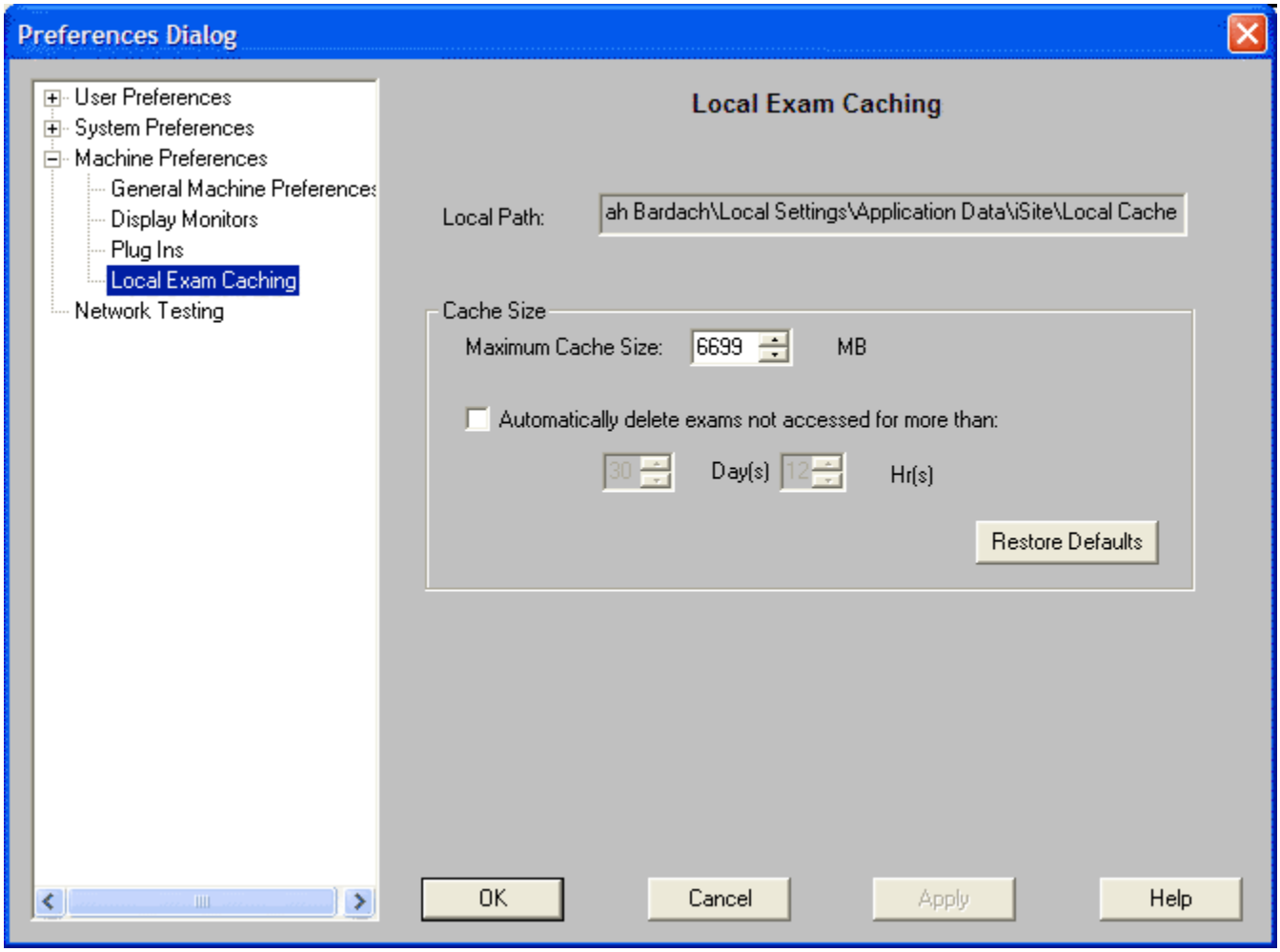


The scanner settings portion of the window provides options for the connection of the bar-code reader to the iSite Radiology machine. If the "Mark Read and Close" option is checked, when a new exam is scanned with the bar-code reader, the previously viewed exam will automatically be marked "Read" and closed. If you only want the previous exam to be closed and not marked "Read", leave this checkbox unchecked.

When you are finished with editing or viewing the preferences, click the "Apply" button to save your changes.

Local Exam Caching: This area of the Preferences allows you to modify the default settings for your Local Exam Cache. The Local Exam Cache folder in the iSite Folder List allows you to cache patient exams on your local machine for later review.

To access the Local Exam Caching settings, click the Local Exam Caching listing in from the Machine Preferences sub-menu, as seen below.

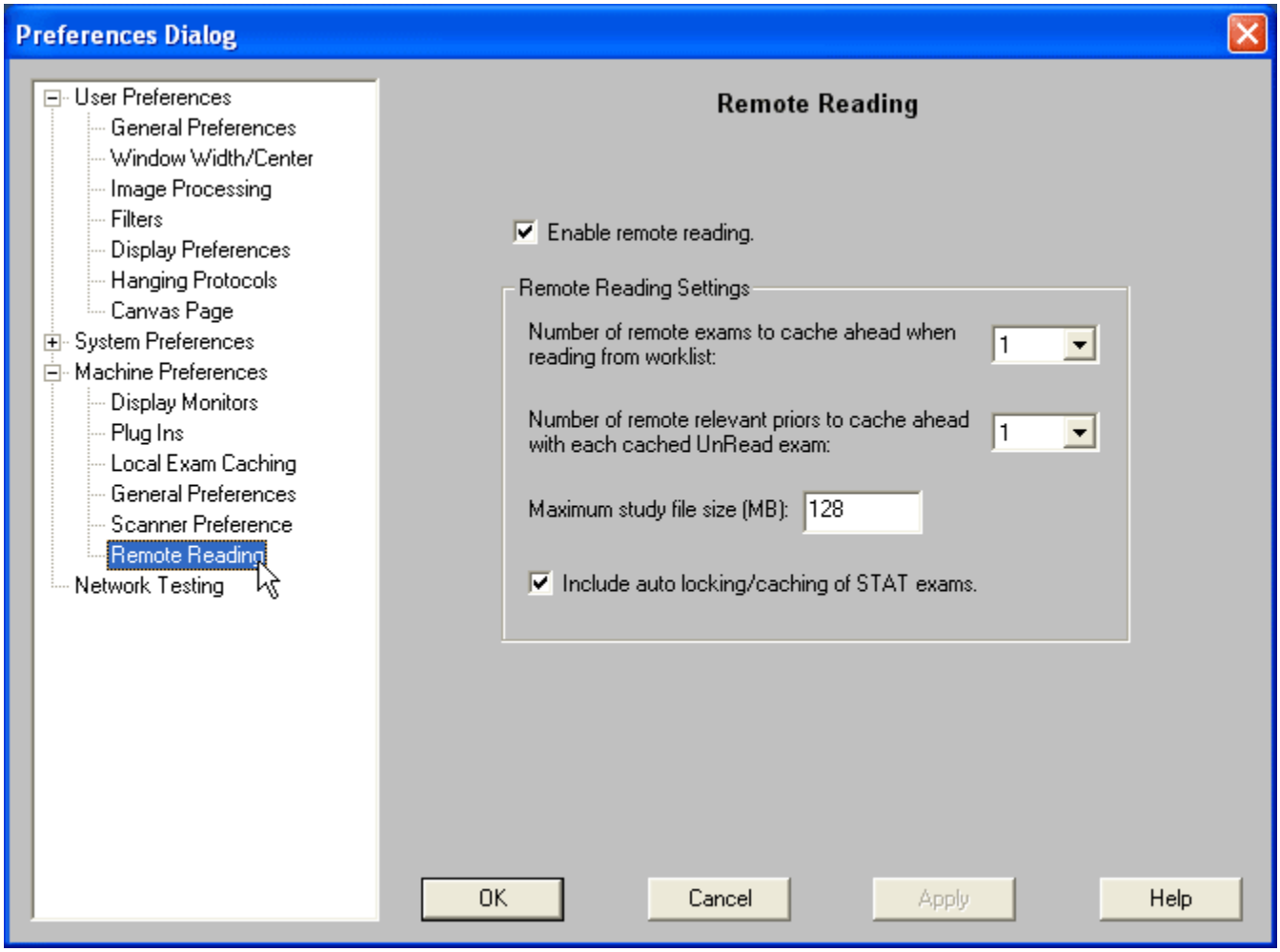


The Local Path section shows where the exams are being stored. This path cannot be edited.

The Cache Size options allow you to set the maximum size of the cache in megabytes as well as permitting you system to automatically clean up unused exams in your cache after a certain amount of time.

Adjust the settings as necessary and then click the "Apply" button or the "OK" button to save your changes and close the Preferences Dialog.

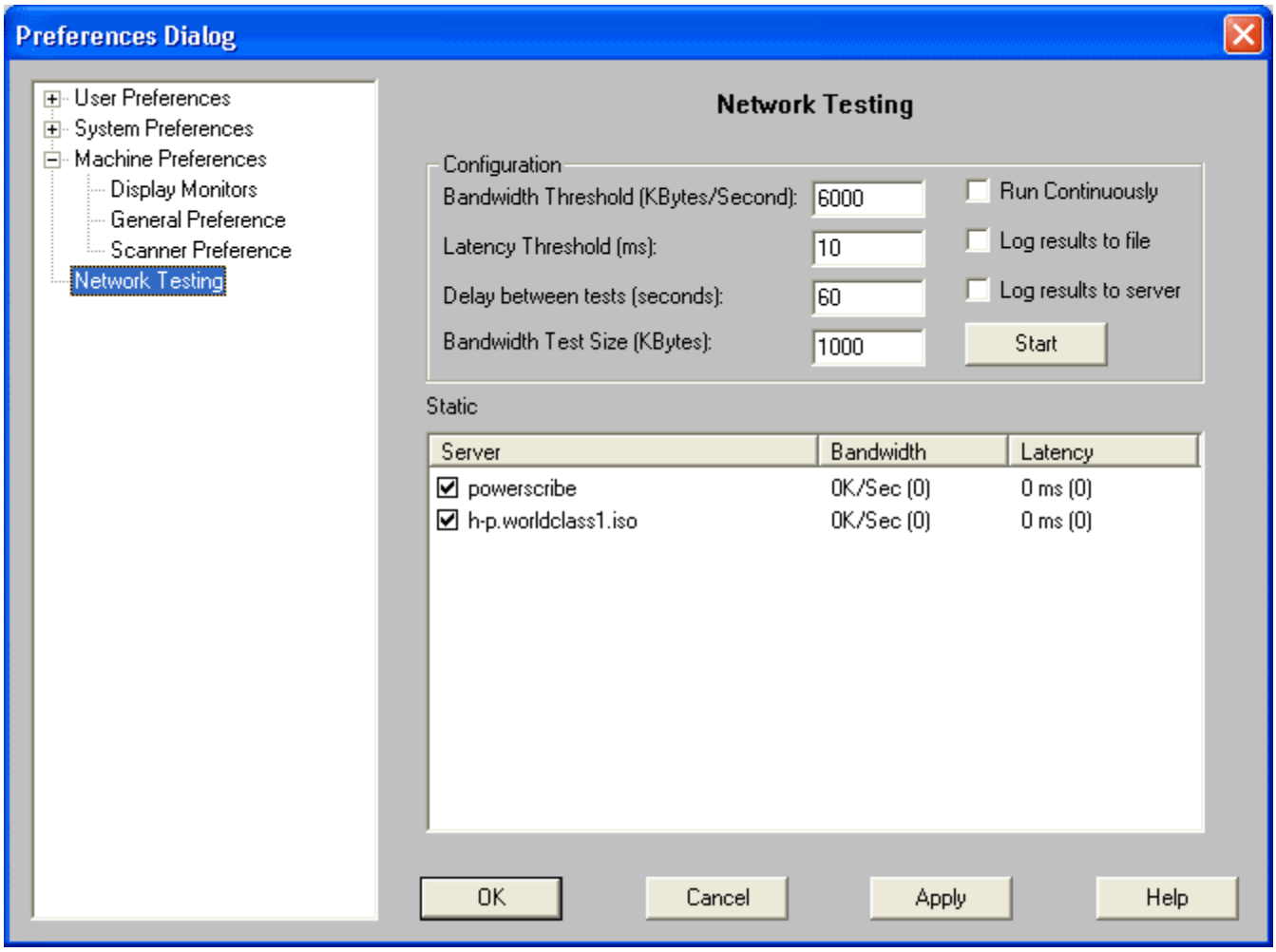
Remote Reading: The Remote Reading preferences allow you to control how iSite Radiology will behave when Remote Reading Mode is enabled at login. To access the Remote Reading preferences, click the listing from the Machine Preferences sub-menu, as seen below.



The "Enable Remote Reading" box is checked by default. To disable Remote Reading Mode at login, uncheck this box and the Remote Reading option will not appear on the iSite Radiology login page. The Remote Reading Settings allow you to specify the number of exams to cache in advance as well as the number of relevant priors to cache with each unread exam. You can also stipulate the maximum file size in MBs and whether or not to include the locking and/or caching of exams labeled STAT.

Network Testing

iSite allows you to configure numerous aspects of network testing and to view the results of those tests on a server by server basis. To access these options, click the "Network Testing" item in the preferences menu at left. The following screen will be displayed:



Set the various options in the "Configuration" area as needed and then click the "Start" button to run the test you have configured. Results will be displayed below.

Other Ways to Personalize iSite Radiology

There are additional ways to personalize your reading experience in iSite Radiology. These options are available from the iSite Radiology Diagnostic Racks and are discussed in detail in the iSite Radiology Diagnostic Racks section of this manual.

iSite Radiology Worklists

iSite Radiology provides several basic lists of patients from which you will select exams to review. Which worklists you use will depend largely on your particular work habits and the workflow at your institution. The Patient Worklist, for example, allows you to perform ad hoc searches of the patient database using multiple criteria to produce a worklist. There are also preset System Filters, such as CT ALL, which produce a worklist from a default set of criteria. Your system administrator can add new System Filters to the system. These Filters are available to all users. Finally, there are Personal Filters, which you create yourself and which are available only to you.

All of these worklists can be found in the iSite Radiology Folder List.

iSite Radiology Control Strip

The first component of iSite Radiology with which you should become familiar is the iSite Radiology Control Strip, located at the top of the screen.

The Control Strip contains nine elements that will remain present throughout your work in iSite Radiology. Please note that not all of the elements are available in the Control Strip. Some of these elements, such as the iExport button, depend on your authorization level. The nine elements are: the Product Information Button (1), the Username (2), the View Exams Tab (3), the product name (4), the Logout Button (5), the iSite Folder List tab (6), the iExport Queue Button (7), the Preferences button (8) and the iSite Radiology User Manual button (9). The View Exams Tab, discussed below, will appear in the lower right-hand corner of the iSite Control Strip once you have selected an exam for review. To access patient exams click the View Exams Tab. Each one of these Tabs and Buttons offers one-click access to a different region or component of iSite Radiology.

Detailed descriptions of the nine elements of the iSite Control Strip follow:

1. **Product Information Button:** Provides information on the version of iSite Radiology that you are currently using.

2. **Username:** Displays the name of the currently logged-in user.

3. **View Exams Tab:** Gateway to viewing diagnostic exams and images. The View Exams tab displays the number of Patients that have been selected for review. Right-clicking the View Exams tab will produce a drop-down menu of all the patients, allowing you to jump directly to a particular patient's exams. Patient exams can be closed by clicking the Close Button at the right end of the View Exams Tab.

4. **Product Name:** Displays the name of the iSite product being used.

5. **Logout Button:** Click here to end your iSite Radiology session. You will be returned to the iSite Radiology Login Page.

6. **Folder List Tab:** Displays the name of the most recently accessed tool, folder or filter in the iSite Folder List (6). Click the tab to return to that area of iSite Enterprise. For example, if you select an exam from the "CT ALL" filter, iSite will immediately display that exam in the canvas page. The Folder List Tab will display "CT ALL". Click the tab to return to the "CT ALL" filter list.

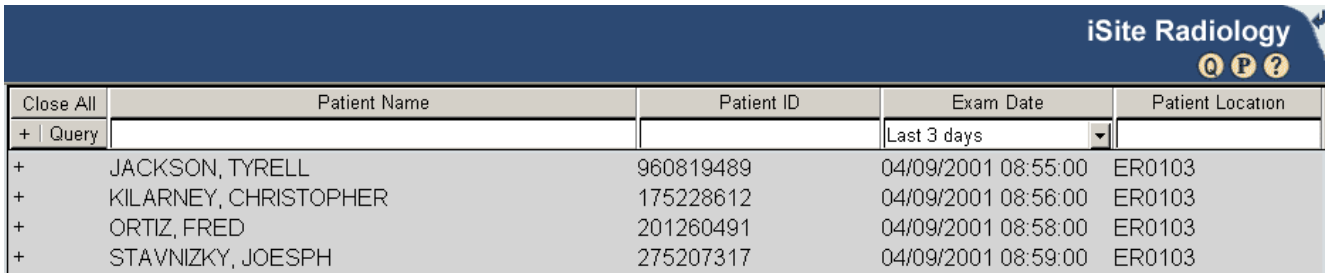
7. **iExport Queue Button:** Opens the iExport Queue where you can monitor DICOM exams being sent from iSite Radiology to other DICOM devices.

8. **iSite Radiology Preferences Button:** Click here to view your iSite Radiology preferences.

9. **iSite Radiology Online Help Button:** Access to iSite Radiology's online help manual, demos and other helpful materials.

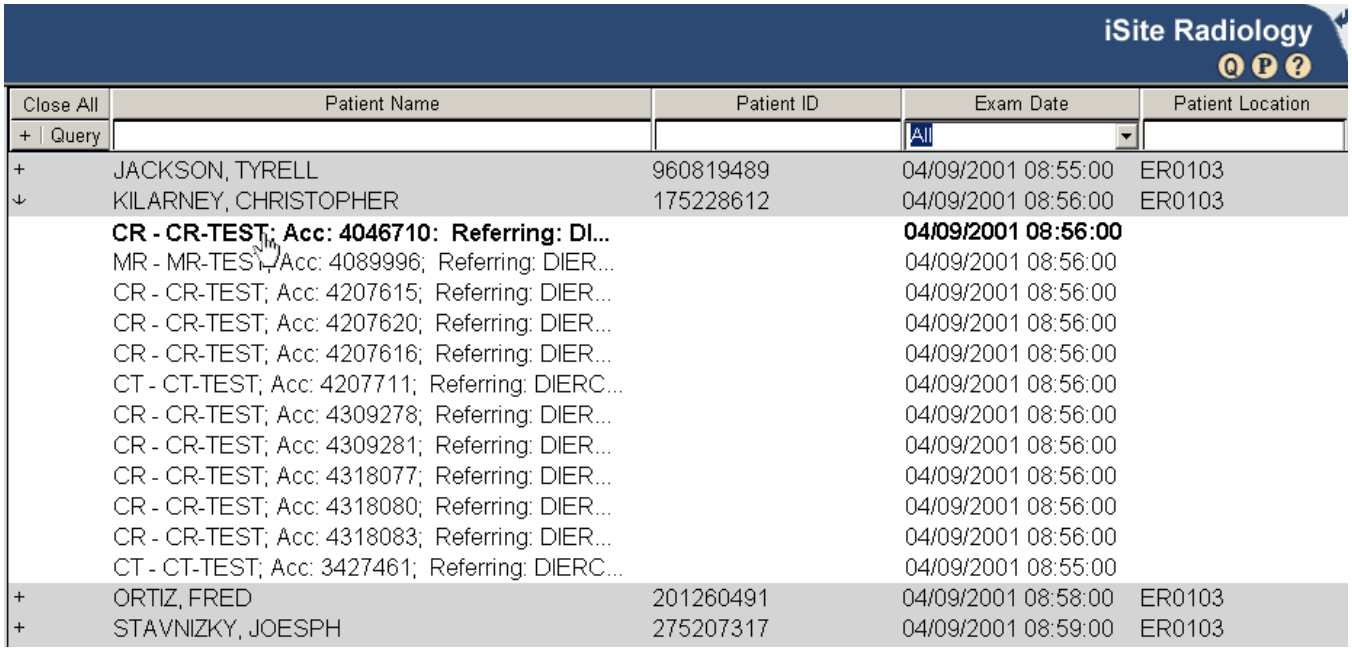
The Patient Directory

When you first login to iSite Radiology, you are presented with the Patient Directory, as seen below. The Patient Directory provides a list of all patients whose exams are available on the iSite server. While many of the patients available in the Patient Directory will not pertain to you, the list is essential for performing ad hoc queries and accessing exams that might be outside of system and personal filter criteria.



Patients are listed by name either in ascending or descending alphabetical order. Each patient listing contains the patient's Patient ID, the date of the patient's last exam and the patient's location.

Patient listings can be expanded by clicking the "+" symbol to the left of the patient name. This will reveal the exams available for that patient, as shown below.

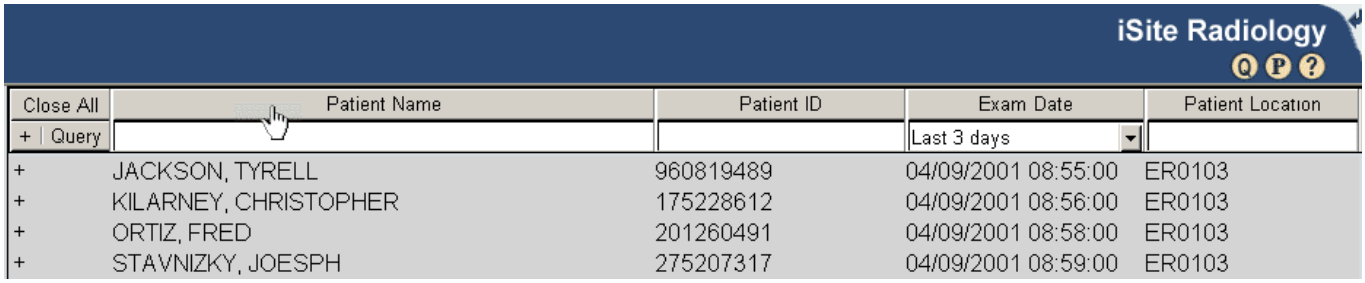

iSite Radiology
Close All
Patient Name
Patient ID
Exam Date
Patient Location
+ Query
All
+ JACKSON, TYRELL 960819489 04/09/2001 08:55:00 ER0103
KILARNEY, CHRISTOPHER 175228612 04/09/2001 08:56:00 ER0103
CR - CR-TEST; Acc: 4046710; Referring: DI... 04/09/2001 08:56:00
MR - MR-TEST; Acc: 4089996; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207615; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207620; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207616; Referring: DIER... 04/09/2001 08:56:00
CT - CT-TEST; Acc: 4207711; Referring: DIERC... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4309278; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4309281; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318077; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318080; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318083; Referring: DIER... 04/09/2001 08:56:00
CT - CT-TEST; Acc: 3427461; Referring: DIERC... 04/09/2001 08:55:00
+ ORTIZ, FRED 201260491 04/09/2001 08:58:00 ER0103
+ STAVNIZKY, JOESPH 275207317 04/09/2001 08:59:00 ER0103

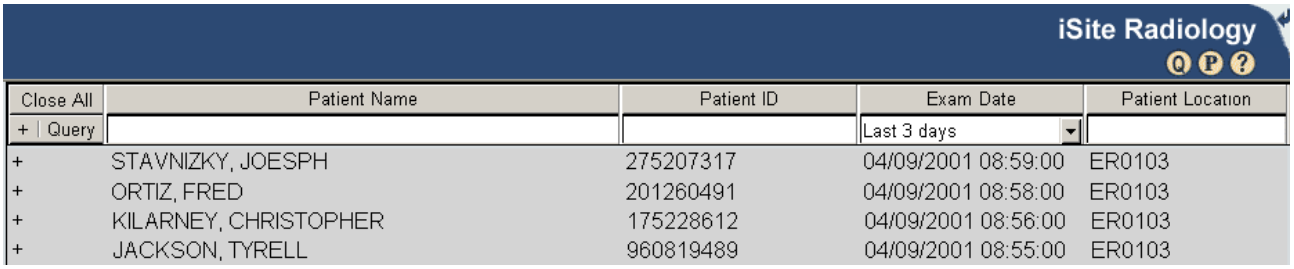
To view an exam from a patient's listing, simply double-click that exam.

Sorting the Patients Directory

The Patient Directory is automatically sorted by Patient Name in alphabetical order. You can also sort the Patient Worklist by Patient ID or Exam Date.

To sort, click the gray column headings above the search fields. Clicking the column headings will alternately sort the Patient Directory in ascending order (A-Z or 1-9) or descending order (Z-A or 9-1).

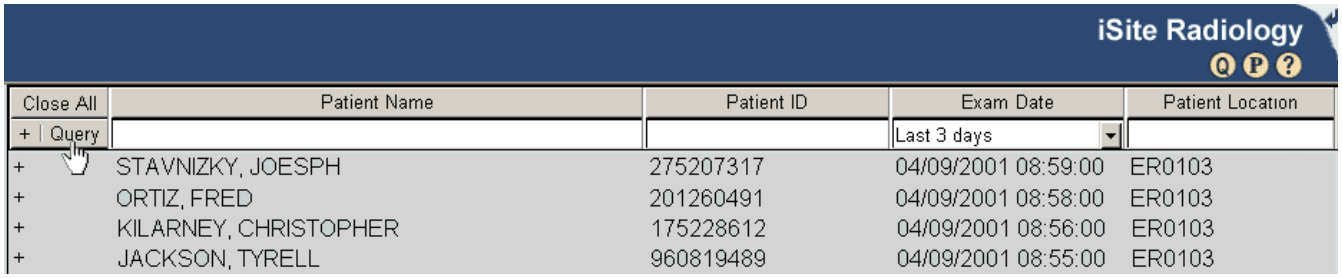


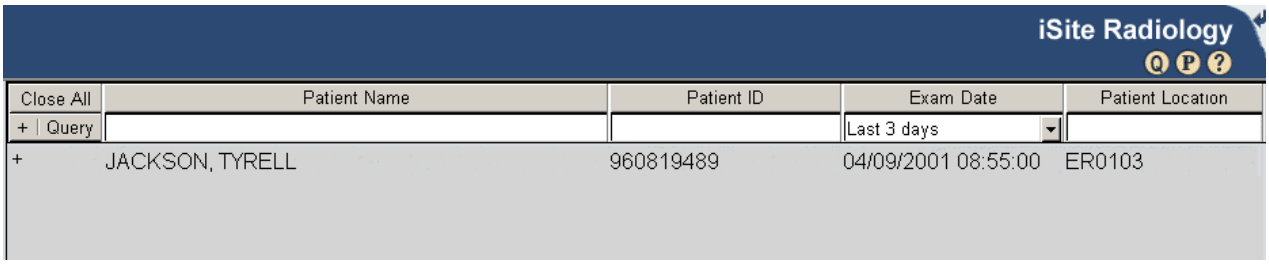


Searching the Patient Directory

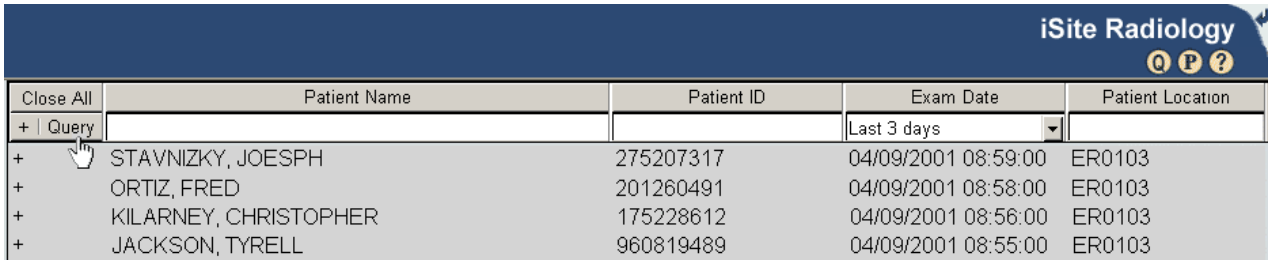
The Patient Directory can be searched using one or more of the following criteria:

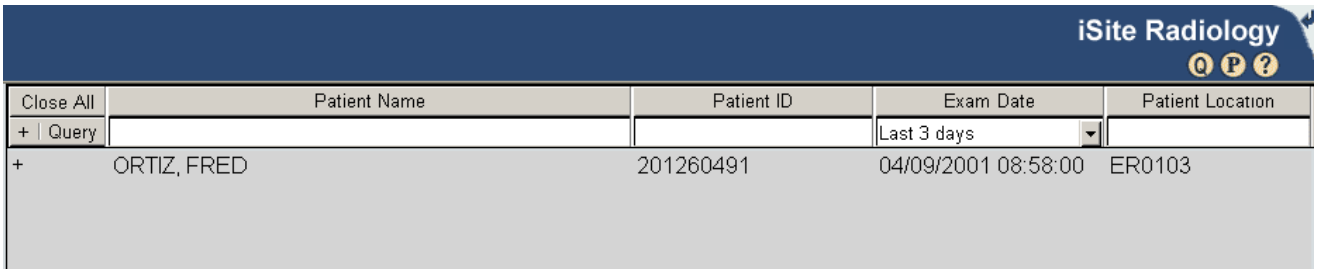
- **Patient Name:** Enter part or all of a patient's last name, then click the "Query" button. Patients whose names match your criteria will be displayed in the Patient Directory. To search for both first and last name, the names should be entered in the "Last Name, First Name" format. Please note the comma separation. In order to search for all patients with the last name "Smith" and the first name "Robert", you would enter "Smith, Robert" into the Patient Name field.



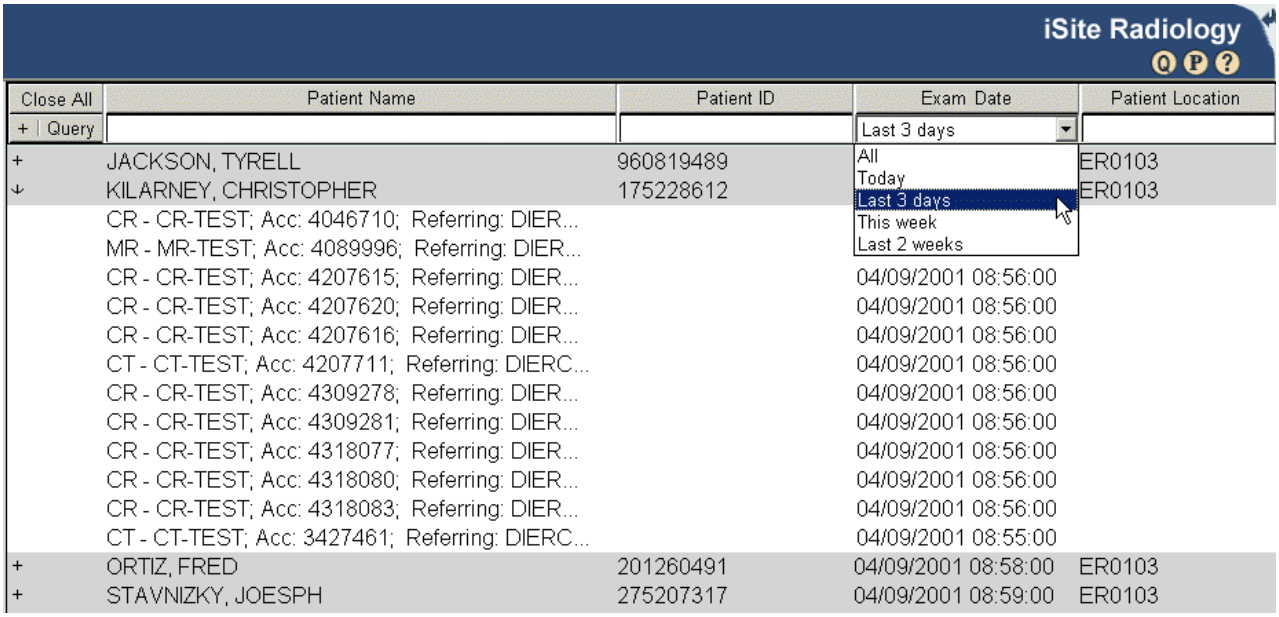


- **Patient ID:** Enter all or part of a patient ID number, then click the "Query" button. Patients whose Patient ID match your criteria will be displayed in the Patient Directory.

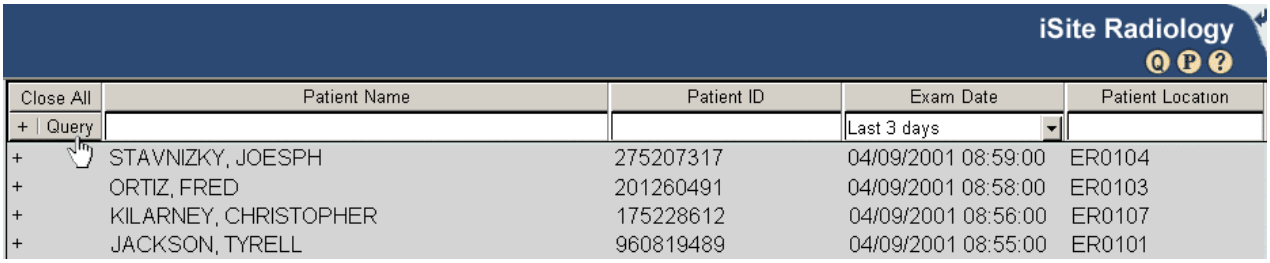


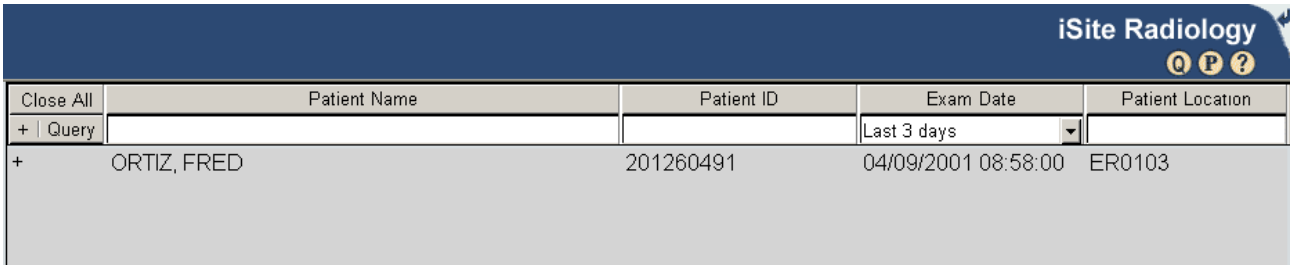


- **Exam Date:** Enter the date you wish to search for, then click the "Query" button. Patients whose exam dates match your criteria will be displayed in the Patient Directory. The Patient Directory can also be searched using one of the five preset dates shown below. The default setting for this field is "All".


iSite Radiology
Close All
Patient Name
Patient ID
Exam Date
Patient Location
+ Query
Last 3 days
All
Today
Last 3 days
This week
Last 2 weeks
+ JACKSON, TYRELL 960819489 ER0103
KILARNEY, CHRISTOPHER 175228612 ER0103
CR - CR-TEST; Acc: 4046710; Referring: DIER...
MR - MR-TEST; Acc: 4089996; Referring: DIER...
CR - CR-TEST; Acc: 4207615; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207620; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207616; Referring: DIER... 04/09/2001 08:56:00
CT - CT-TEST; Acc: 4207711; Referring: DIERC... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4309278; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4309281; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318077; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318080; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318083; Referring: DIER... 04/09/2001 08:56:00
CT - CT-TEST; Acc: 3427461; Referring: DIERC... 04/09/2001 08:55:00
+ ORTIZ, FRED 201260491 04/09/2001 08:58:00 ER0103
+ STAVNIZKY, JOESPH 275207317 04/09/2001 08:59:00 ER0103

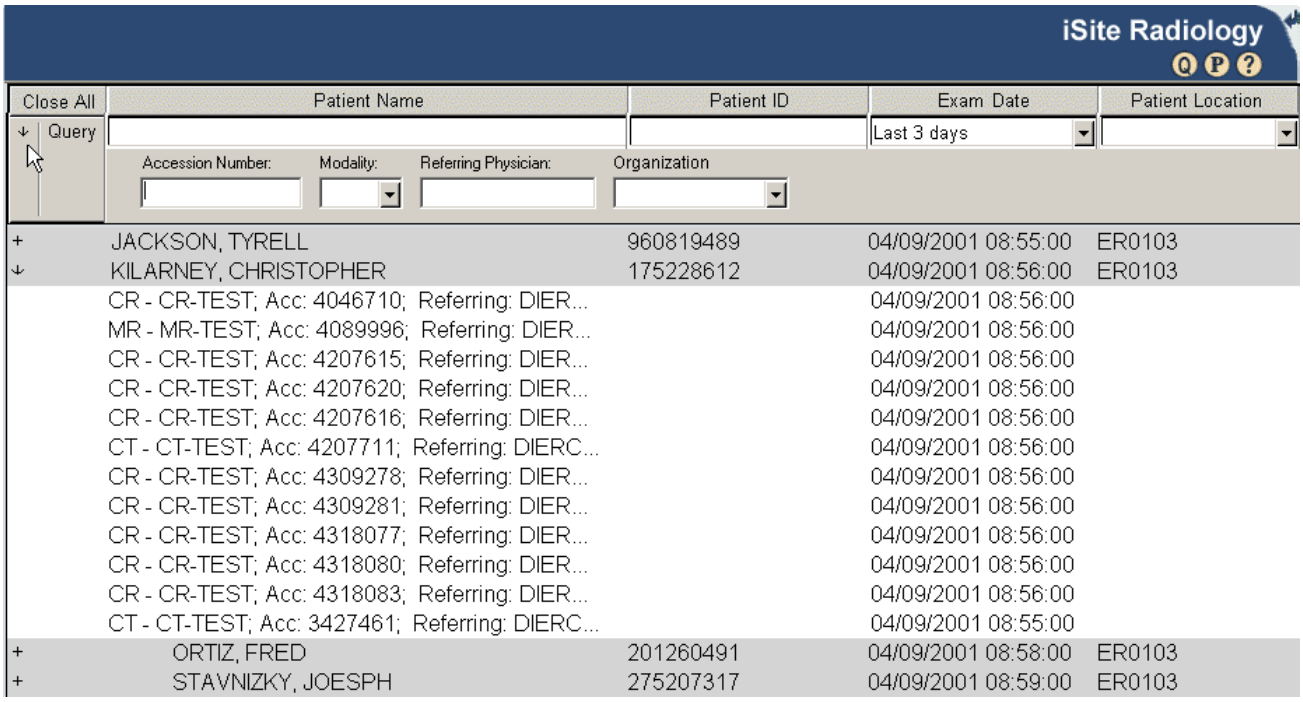
- **Patient Location:** Enter the patient location you wish to search for and then click the "Query" button. Exams that match your search criteria will be displayed below.





Example: You wish to find a patient who was examined on November 1, 2000, but you do not remember the patient's entire name. Simply type "11/01/2000" in the Exam Date field, then click the "Query" button. iSite will display all the patients who were examined on November 1, 2000. If you remember part of a patient's name, you may type that in as well. For example, running a search with the date "11/01/2000" and the name "Mora" in the Patient Name field will produce a list of patients whose last name begins with "Mora" and who were examined on November 1, 2000.

Expanded Search


iSite Radiology
Close All
Patient Name
Patient ID
Exam Date
Patient Location
Query
Last 3 days
Accession Number:
Modality:
Referring Physician:
Organization
+ JACKSON, TYRELL 960819489 04/09/2001 08:55:00 ER0103
KILARNEY, CHRISTOPHER 175228612 04/09/2001 08:56:00 ER0103
CR - CR-TEST; Acc: 4046710; Referring: DIER... 04/09/2001 08:56:00
MR - MR-TEST; Acc: 4089996; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207615; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207620; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4207616; Referring: DIER... 04/09/2001 08:56:00
CT - CT-TEST; Acc: 4207711; Referring: DIERC... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4309278; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4309281; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318077; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318080; Referring: DIER... 04/09/2001 08:56:00
CR - CR-TEST; Acc: 4318083; Referring: DIER... 04/09/2001 08:56:00
CT - CT-TEST; Acc: 3427461; Referring: DIERC... 04/09/2001 08:55:00
+ ORTIZ, FRED 201260491 04/09/2001 08:58:00 ER0103
+ STAVNIZKY, JOESPH 275207317 04/09/2001 08:59:00 ER0103

The Patient Directory can also be searched using specific information such as Accession Number, Modality and Referring Physician name. To access the expanded search features, click the plus symbols on the "Query" button. The expanded search fields function in the same manner as the default search options. Enter your search criteria in the appropriate field and then click the "Query" button.

To search using the name of a Referring Physician, use the following guidelines:

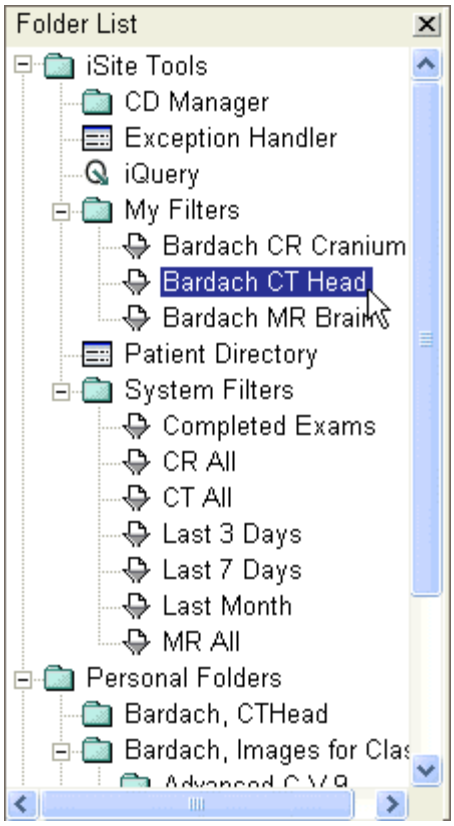
- Search on the Last Name of the referring physician.
    - For example: <Doe>.
- Search on partial Last Name of the referring physician.
    - For example: <Do*>.
    - The "*" symbol represents a wildcard in this case and will allows you to match on all last names that start out with "Do".
- Search on Last Name, First Name.
    - For example: <Doe, John>
    - The "," symbol is used to separate the Last Name from the First Name
- Search for multiple referring physicians
    - For example: <Doe, John; Smith, Ken> or <Doe; Smith>
    - The ";" symbol is used to separate the names from each other
    - It is not possible to use the "*" wildcard when searching for multiple referring physicians
    - It is not possible to search for multiple physicians using a Last + First Name for one and only a Last Name for another one.

Restoring the Default Patient Directory

To restore the default Patient Directory after having narrowed the Directory through a search, select the "All" option from the Exam Date pull-down menu and click the "Query" button.

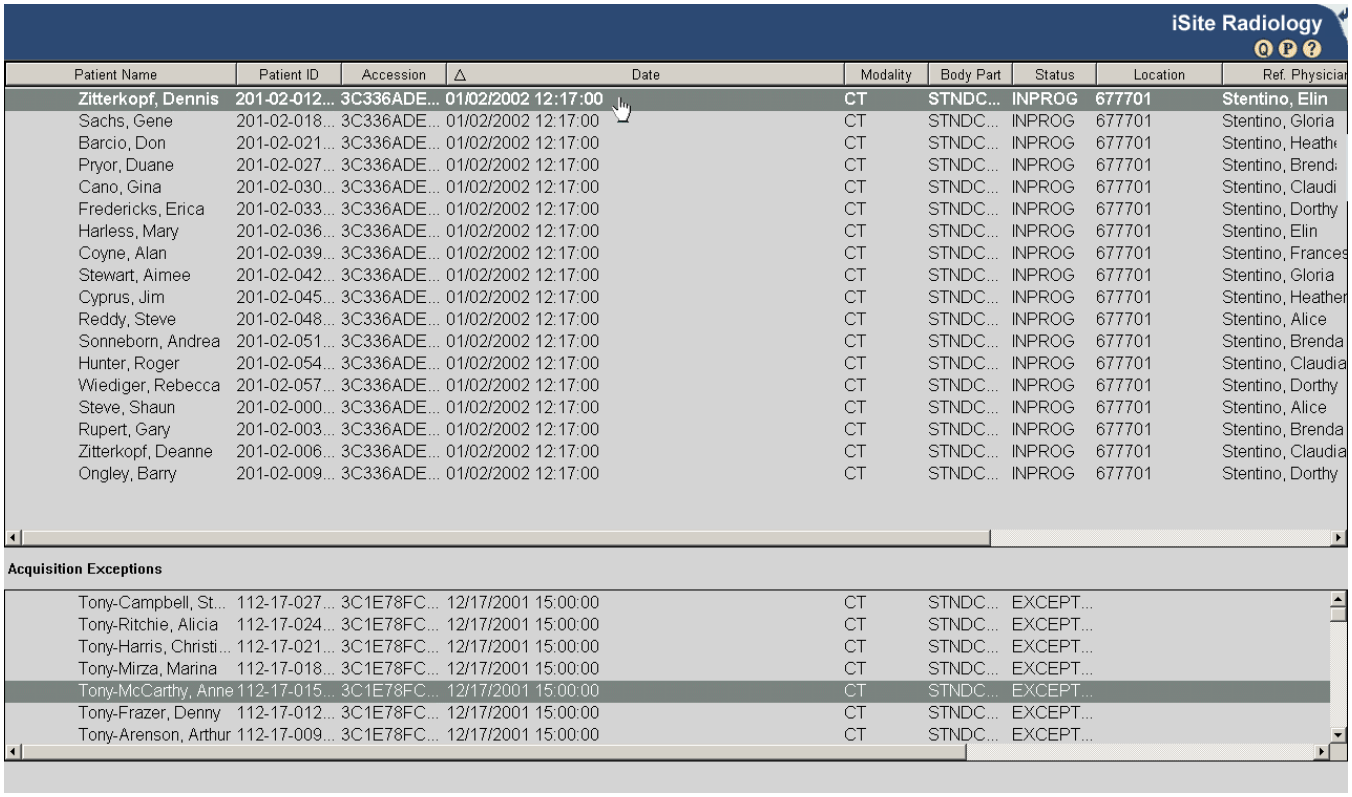
The Filter Worklists

There are two different types of Filter Worklists, Personal Filters ("MyFilters") and System Filters. Both of these can be access from the iSite Folder List, as seen below.

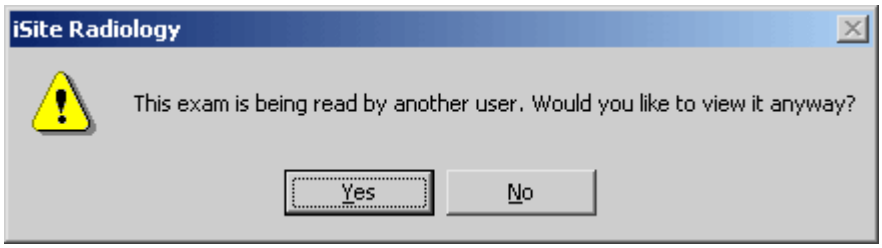


The Filter Worklist contains all available unread exams and will be organized according to the filter currently being employed. The bottom portion of the Worklist contains any acquisition exceptions that have been created in your institution's Radiology Information System (RIS). These exams can be selected and viewed like any other, allowing you to provide a diagnostic report even if the exam has not been fully resolved.

By spending some time at the outset of your first interaction with iSite Radiology, you can quickly tailor a set of filters to meet your needs. Once you have created your personal filters, when you subsequently use the program you will be able to begin working immediately with your personalized configuration and worklist.


iSite Radiology
Patient Name
Patient ID
Accession
Date
Modality
Body Part
Status
Location
Ref. Physician
Zitterkopf, Dennis 201-02-012... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Elin
Sachs, Gene 201-02-018... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Gloria
Barcio, Don 201-02-021... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Heath
Pryor, Duane 201-02-027... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Brend
Cano, Gina 201-02-030... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Claudi
Fredericks, Erica 201-02-033... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Dorthy
Harless, Mary 201-02-036... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Elin
Coyne, Alan 201-02-039... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Frances
Stewart, Aimee 201-02-042... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Gloria
Cyprus, Jim 201-02-045... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Heather
Reddy, Steve 201-02-048... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Alice
Sonneborn, Andrea 201-02-051... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Brenda
Hunter, Roger 201-02-054... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Claudia
Wiediger, Rebecca 201-02-057... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Dorthy
Steve, Shaun 201-02-000... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Alice
Rupert, Gary 201-02-003... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Brenda
Zitterkopf, Deanne 201-02-006... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Claudia
Ongley, Barry 201-02-009... 3C336ADE... 01/02/2002 12:17:00 CT STNDC... INPROG 677701 Stentino, Dorthy
Acquisition Exceptions
Tony-Campbell, St... 112-17-027... 3C1E78FC... 12/17/2001 15:00:00 CT STNDC... EXCEPT...
Tony-Ritchie, Alicia 112-17-024... 3C1E78FC... 12/17/2001 15:00:00 CT STNDC... EXCEPT...
Tony-Harris, Christi... 112-17-021... 3C1E78FC... 12/17/2001 15:00:00 CT STNDC... EXCEPT...
Tony-Mirza, Marina 112-17-018... 3C1E78FC... 12/17/2001 15:00:00 CT STNDC... EXCEPT...
Tony-McCarthy, Anne 112-17-015... 3C1E78FC... 12/17/2001 15:00:00 CT STNDC... EXCEPT...
Tony-Frazer, Denny 112-17-012... 3C1E78FC... 12/17/2001 15:00:00 CT STNDC... EXCEPT...
Tony-Arenson, Arthur 112-17-009... 3C1E78FC... 12/17/2001 15:00:00 CT STNDC... EXCEPT...

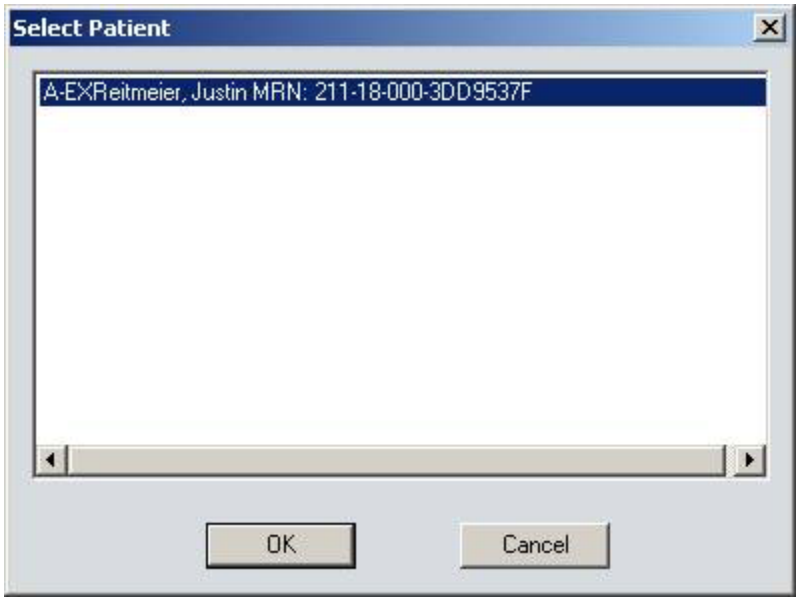
The worklist contains several different elements. The most prevalent is the list itself. Here, exams are organized by Patient Name, Patient ID, Accession Number, Date, Modality, Body Part, Status, Patient Location, Referring Physician, Organization, Procedure Code and Procedure Description. The report icon (📄) indicates whether a report is available for the exam in question. If an exam is in use, the lock symbol will be displayed next to it (🔒). In order to support internal Radiology workflow, exams with the status of "In Progress", "Completed", "Dictated" or "Preliminary" will be automatically locked by the iSite Server. If you try to view a locked exam, the following dialog will be displayed.



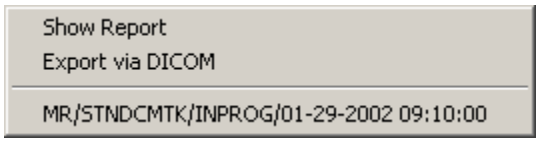
Locked exams can be viewed but you cannot create a presentation state or mark the exam read.

Below the main list of exams is a list of acquisition exceptions, if any are present. When you open an exam from the Exceptions portion of the Worklist, iSite Radiology will check to see if the exam matches any patients in the iSite database. If the system detects a match, you will be prompted to view other exams from the identified patient. You can answer "Yes" or "No". If the query results in more than one matching MRN or if the patient name does not match, a dialog will be displayed showing the

MRN and patient name for the exception study and all matching patients. You can select "OK" to accept the suggested prior exams or choose "Cancel" to not load them, as seen below.



Right-clicking exam listings provides additional functionality, revealing a status-sensitive pop-up menu, shown below.



All exam-listings display the first two options, Show Report and Export via DICOM. These functions allow you to view the Clinical Exam Notes for an exam and to send the exam via DICOM to another DICOM device, such as a 3D-Imaging device or a DICOM printer. The lower portion of exams that are either In Progress or Scheduled, display information about the exam including the modality, procedure code, status and date/time.

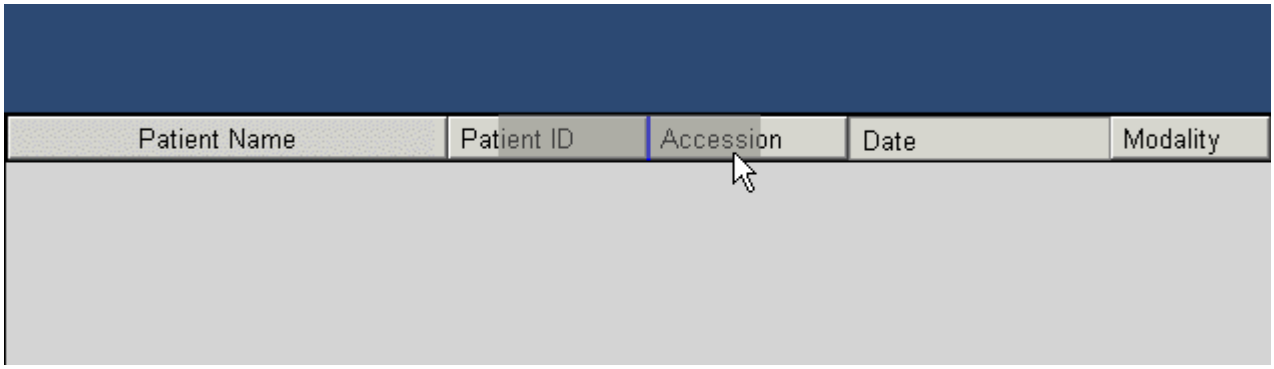
The Reading Worklist is highly customizable, both in terms of its presentation and its content. You can arrange the list according to your individual needs or preferences.

Customizing the Filter Worklist Appearance

Customizing the Filter Worklist appearance involves using your mouse to rearrange, add or delete columns of information. Please note that these changes are not permanent. In other words, you will have to make these changes every time you use iSite Radiology. The available columns are: Patient Name, Patient ID, Accession, Date, Modality, Body Part, Status, Location, Ref. Physician, Organization, Proc. Code, Proc. Desc. and Subspecialty. Furthermore, certain fields (Patient Name, Patient ID number,

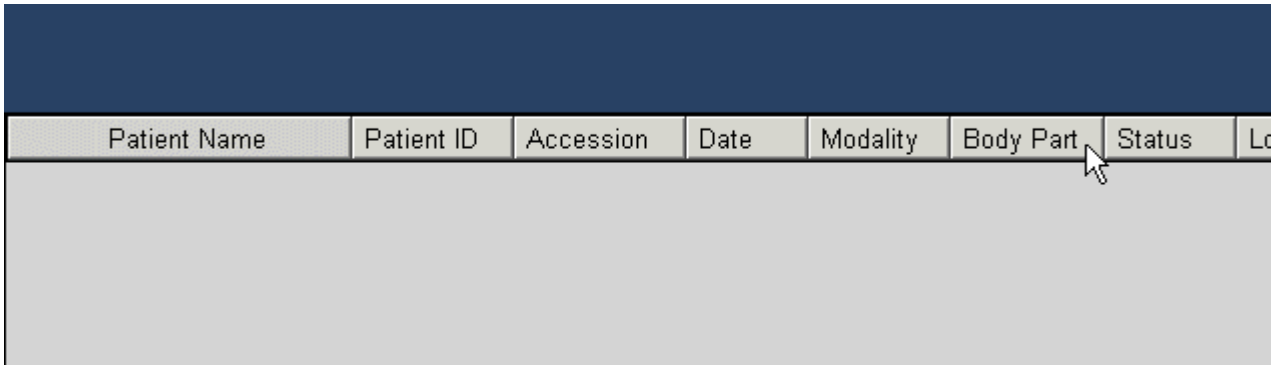
Accession Number, Date and Modality) cannot be removed, though they can be rearranged.

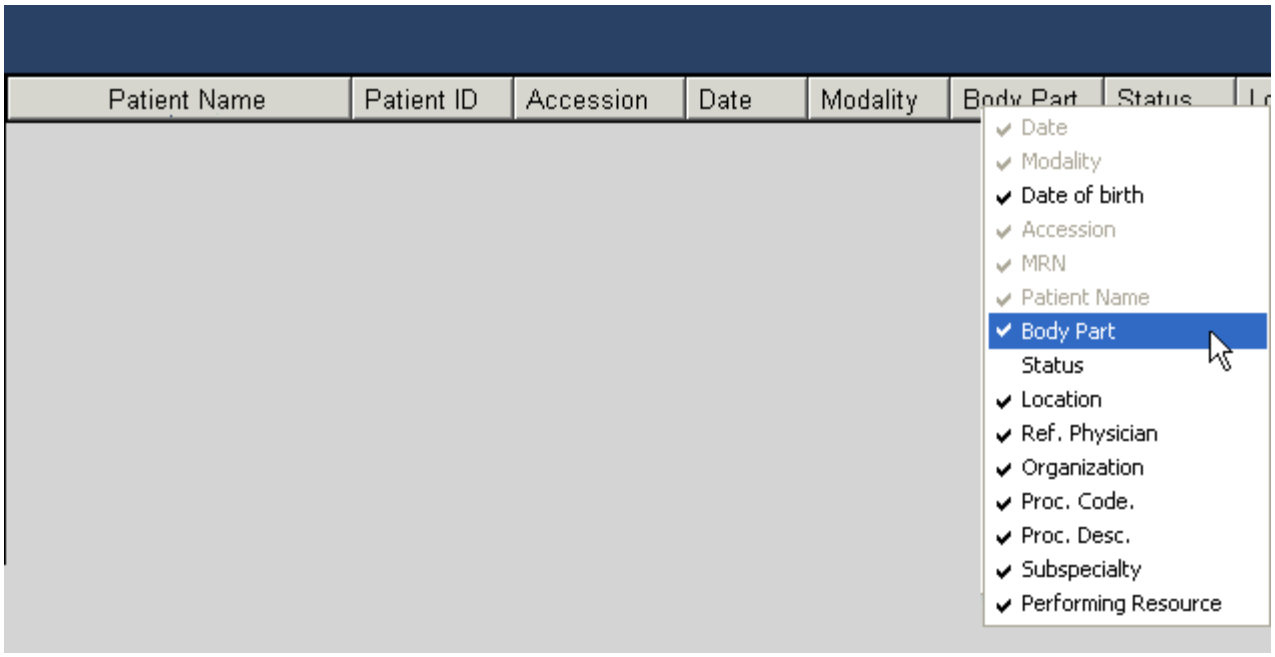
To rearrange the order of the columns simply click on a column heading and drag it to the desired location, as shown below.



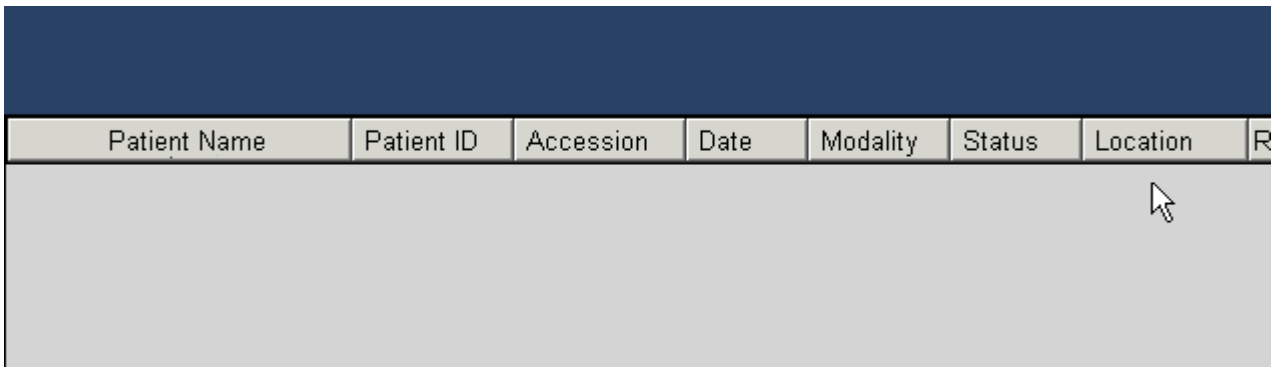
When you release the mouse button, the screen will refresh with the columns in the new order.

To remove a column of information, right-click the column you wish to remove. A pop-up menu is displayed, as seen in the illustrations below.





Select the name of the column from the list and release the mouse button. The column will be removed, as seen below.

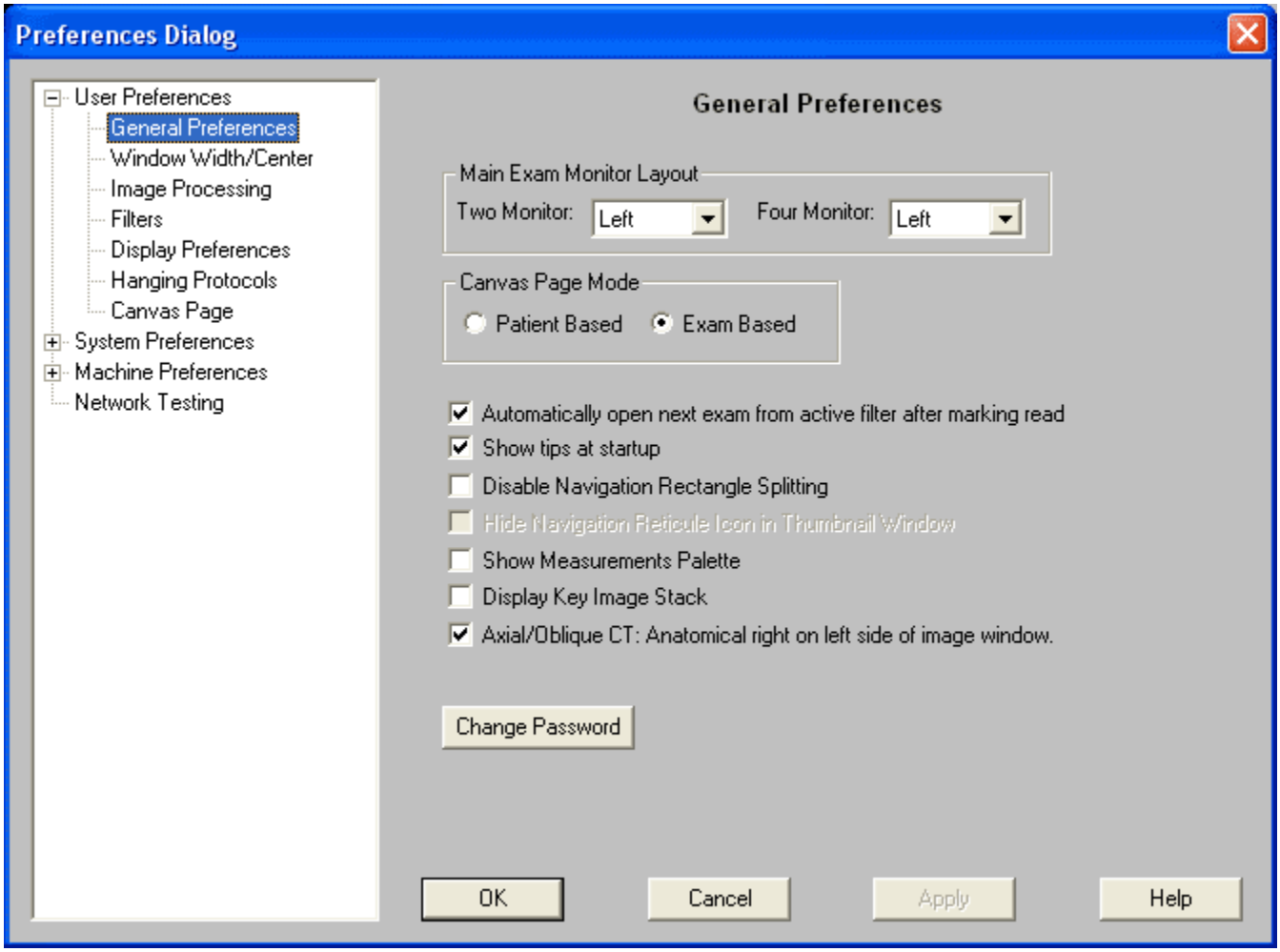


To add columns that you have removed, right-click the column nearest to where you would like to reinsert the column. A pop-up menu will appear, as seen below.

Column names that have been grayed-out (Patient Name, Patient ID, Accession, Date and Modality) cannot be removed. Select the column you would like to add from the list of columns that have been removed. When you release the mouse button, the Reading Worklist will be refreshed and the column will be added.

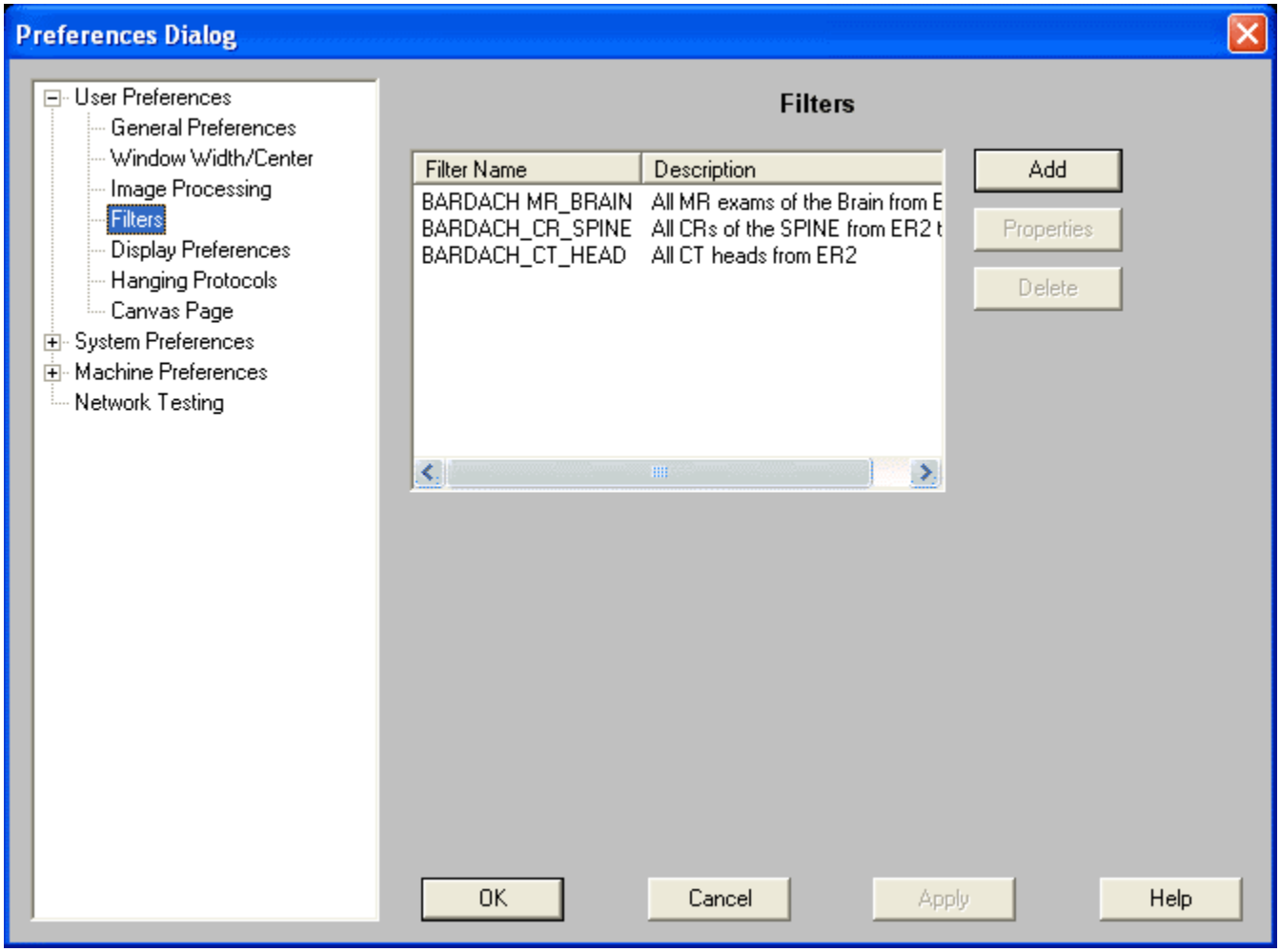
Customizing your Personal Filters

To create a set of personal, specialized filters, click the iSite Radiology Preferences Button in the iSite Control Strip. The Preferences Dialog will appear, shown below. This window is the gateway to your personal profile. Here, you can set numerous options and configure many aspects of iSite Radiology to meet your specific needs. iSite Preferences are discussed at length in the Personalizing iSite Radiology section of this manual.



The User Preferences window contains many settings, all of which will be discussed in a later section. Click the Filters Preferences listing to reveal the window shown below.

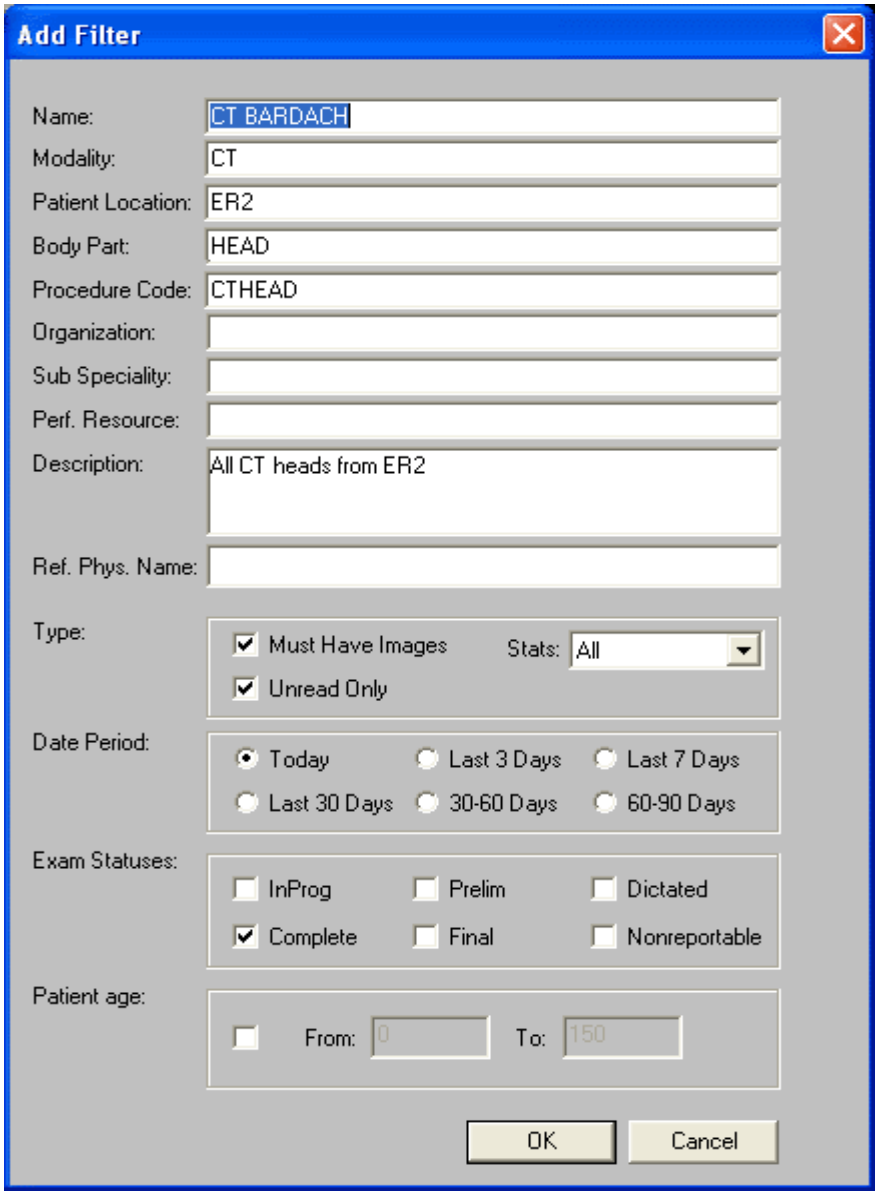
The Filters area, seen below, contains information regarding all of the different filters that can be used to tailor your Reading Worklist to meet your specific needs. By using a preset filter or by creating a new one, you can generate a worklist that will contain only the exams that meet your filter criteria. It is important that you exercise care in creating your filters, lest you accidentally exclude exams which you wish to read.



By using these filters, you can create a worklist that displays only those exams that you wish to read. For example, if you specialize in a particular body part, such as the head, and in a particular modality, such as MR, you can use and create filters to generate a worklist that will only contain MR Head exams. You can also create filters that will generate a list of exams only from one location in your organization, such as the ER or ICU. Finally, iSite comes with preset filters based on the date of the exams in question. If you only wish to read exams from today, the last 3, 7 or 30 days, you can chose a filter that will generate a list of exams only from that period.

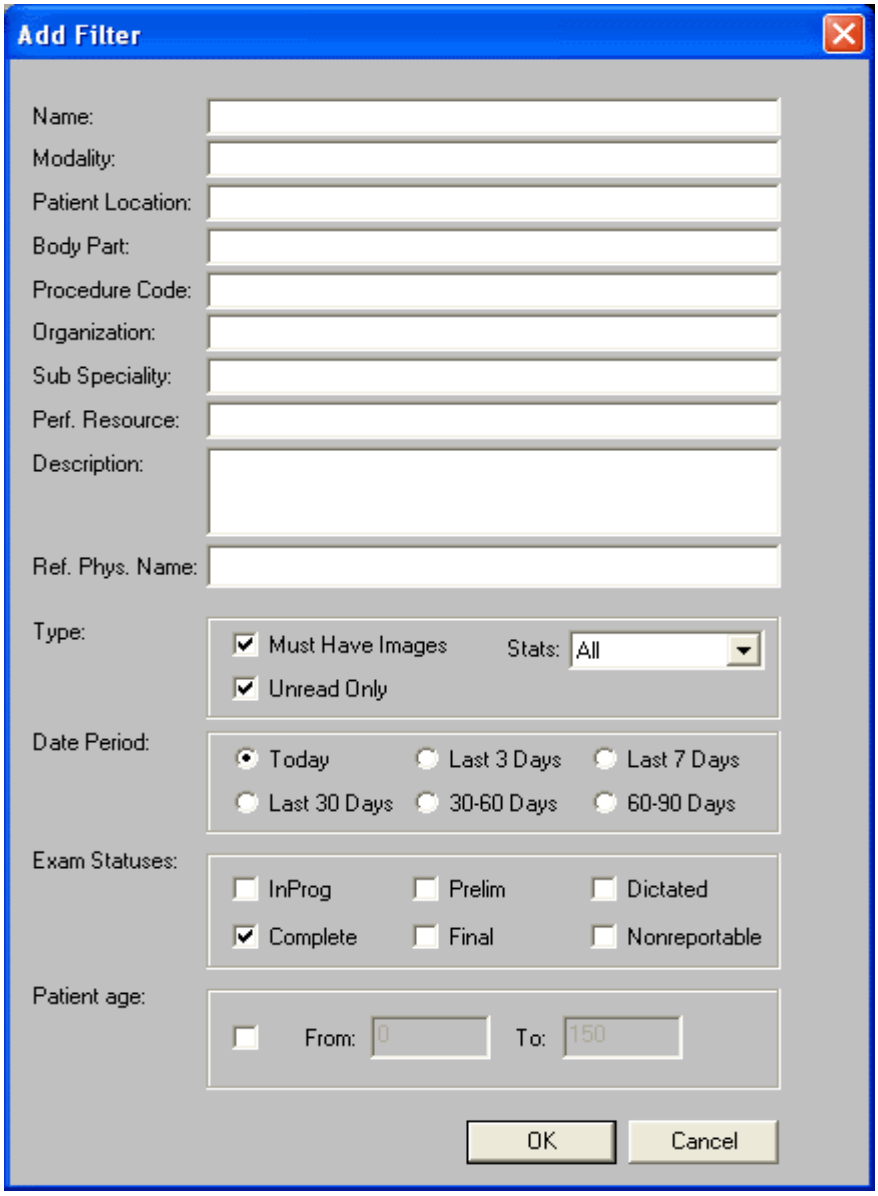
iSite comes hardcoded with a number of preset filters, all of which can be modified if so desired. The preset filters may include CR All, CR Chest, CT Abdomen, CT All, CT Chest, CT Head, DS All, ER, ICU, Last 3 Days, Last 30 Days, Last 7 Days, MR All, MR Head, MR Spine, OR, Today and US All.

To edit or view the properties of any one of the filters, highlight that filter using your mouse and click the "Properties" button. The following window will appear.

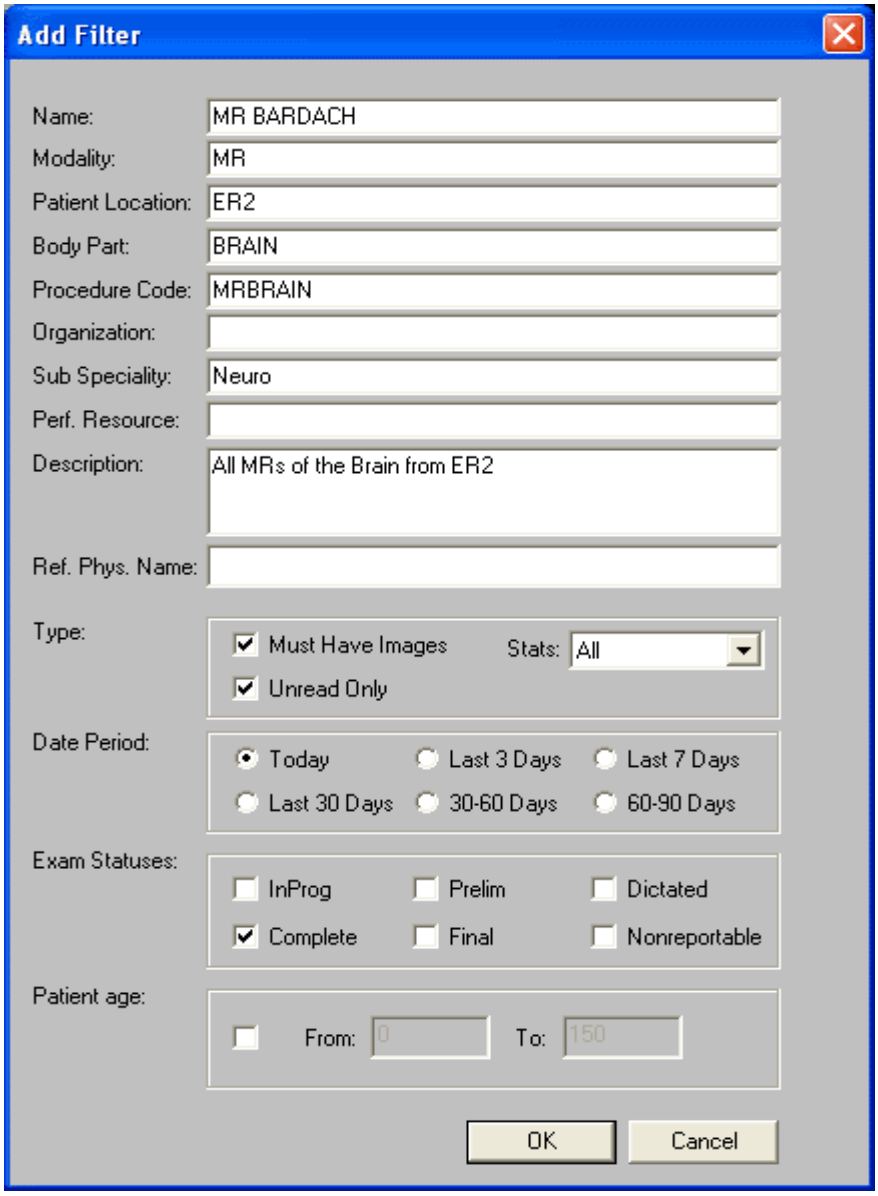


Make changes as desired by entering the appropriate information into the fields and selecting the appropriate buttons below. When you finish, click the "OK" button. You will be returned to the Filter Preferences Tab. Please note that certain fields must be specified exactly. For example, if you wish to specify the organization "IH4/ac32.*j", you must specify the exact name. Any omissions or errors will result in a limited filter.

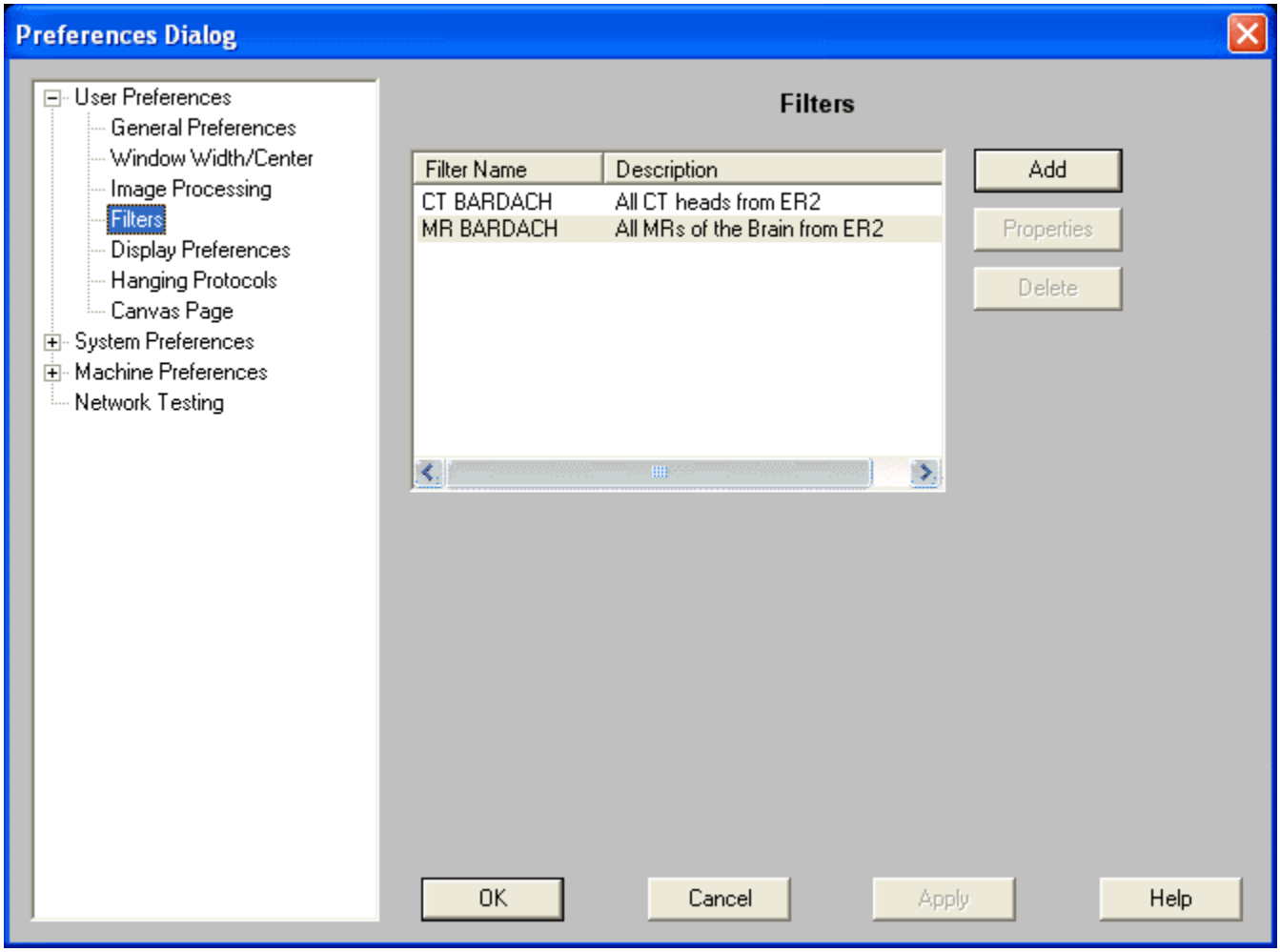
If you wish to create a new filter, click the "Add" button. A blank filter window, the "Add Filter Info" dialog will appear, as shown below.



Specify all pertinent information to create the exact filter you desire, as shown below.



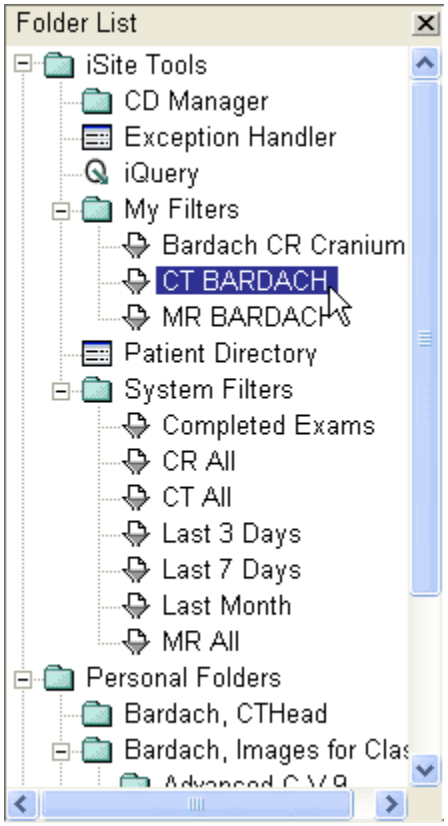
When you have finished click the "OK" button. You will be returned to the Filters Preferences Tab, where your new filter will be displayed in the list of filters, as shown below.



If you wish to export your filter settings, click the "Export" button. You can save your settings in a sharable format, allowing other physicians to share your settings. To import a group of filters, click the "Import" button. Browse to the desired .xml file and click "OK". The settings will load.

If you have finished reviewing and/or editing your personal preferences, click the "OK" button. You will be returned to the Reading Worklist. If you wish to revert to the original settings, click the "Default" button.

Having set up your new filter, select that filter from the Personal Filters folder, as shown below. The worklist window will be rearranged to meet your new criteria



Selecting Exams for Display

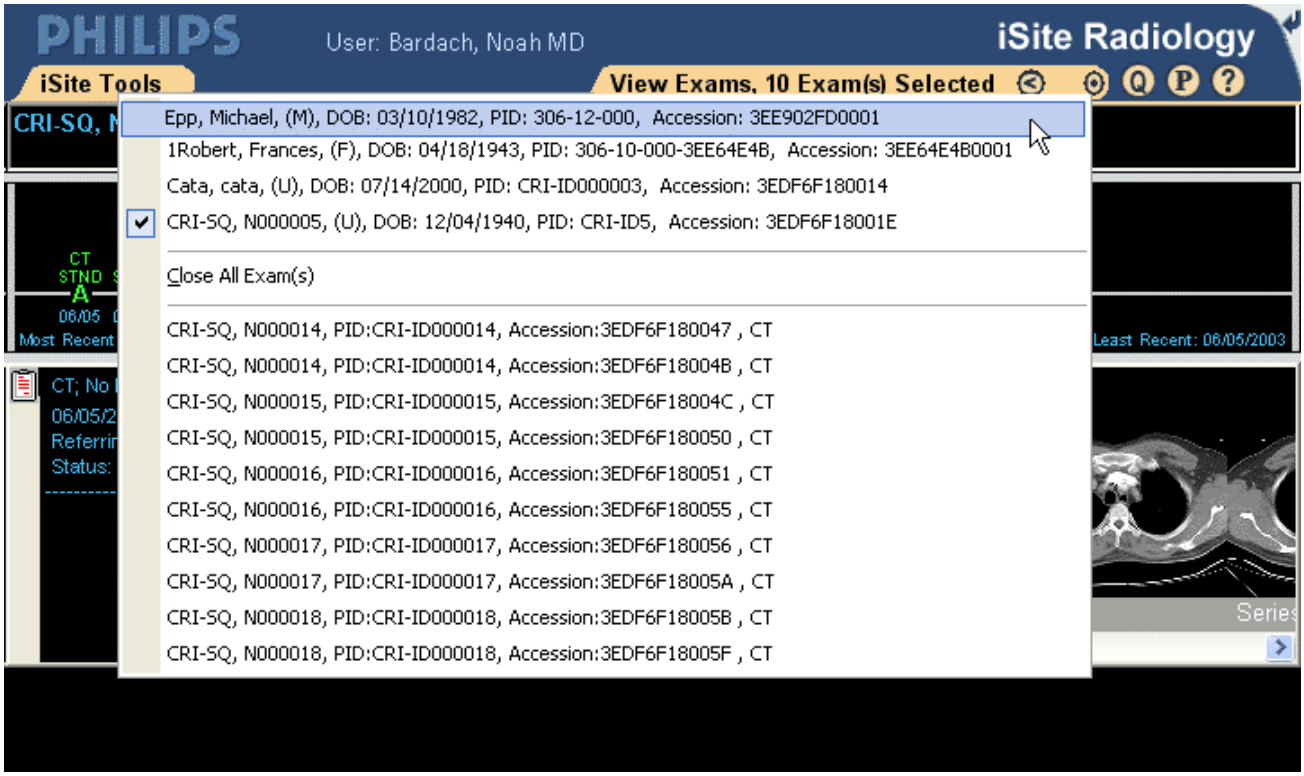
To view an exam in the Canvas Page and on your Diagnostic Monitors, double-click the exam-listing, either from any worklist or folder. The View Exams Tab will appear in the lower right-hand corner of the iSite Control Strip, as seen below. The View Exams Tab displays the number of patients that have been selected for review.

Multiple exam-listings can be selected. Each patient that you open will increase the number displayed on the View Exams Tab. Please note that a maximum of 30 patients can be selected at one time. This is a useful function for selecting more than one patient from a worklist at once, as opposed to double-clicking a single exam and returning repeatedly to the list.

Once you have selected all the exams you wish to initially view, click the View Exams Tab and you will be transferred immediately to the Canvas Page area of iSite Radiology where you will be able to read and annotate exams.

If you would just like to run through the exams you currently have open, click the Next Exam ( ) or Last Exam ( ) buttons on the View Exams Tab, seen below.

The View Exams Tab also provides extended functionality through right-clicking. Right-click on the View Exams Tab to view a list of 10 unread exams that are in a CT Filter worklist, as seen below.


PHILIPS
User: Bardach, Noah MD
iSite Radiology
iSite Tools
View Exams, 10 Exam(s) Selected
Epp, Michael, (M), DOB: 03/10/1982, PID: 306-12-000, Accession: 3EE902FD0001
1Robert, Frances, (F), DOB: 04/18/1943, PID: 306-10-000-3EE64E4B, Accession: 3EE64E4B0001
Cata, cata, (U), DOB: 07/14/2000, PID: CRI-ID000003, Accession: 3EDF6F180014
CRI-SQ, N000005, (U), DOB: 12/04/1940, PID: CRI-ID5, Accession: 3EDF6F18001E
Close All Exam(s)
CRI-SQ, N000014, PID:CRI-ID000014, Accession:3EDF6F180047 , CT
CRI-SQ, N000014, PID:CRI-ID000014, Accession:3EDF6F18004B , CT
CRI-SQ, N000015, PID:CRI-ID000015, Accession:3EDF6F18004C , CT
CRI-SQ, N000015, PID:CRI-ID000015, Accession:3EDF6F180050 , CT
CRI-SQ, N000016, PID:CRI-ID000016, Accession:3EDF6F180051 , CT
CRI-SQ, N000016, PID:CRI-ID000016, Accession:3EDF6F180055 , CT
CRI-SQ, N000017, PID:CRI-ID000017, Accession:3EDF6F180056 , CT
CRI-SQ, N000017, PID:CRI-ID000017, Accession:3EDF6F18005A , CT
CRI-SQ, N000018, PID:CRI-ID000018, Accession:3EDF6F18005B , CT
CRI-SQ, N000018, PID:CRI-ID000018, Accession:3EDF6F18005F , CT
Least Recent: 06/05/2003

In the resulting list, the currently viewed exam is marked with a checkmark and displays the patient's name, sex, date of birth and Patient Identification number. Up to 10 exams in the current worklist are listed with the patient name, Patient Identification Number, Accession number and modality. The various exams in the displayed list can all be selected with your mouse cursor. To select a different exam from your worklist or to close all open patients, left-click the desired item.

Please note that if an unread exam is selected from a worklist and opened in the Canvas Page, it will become the "Main Exam". If an exam with the status "In Progress" from the same patient is selected in addition to the "Main Exam", a message will appear advising you that "You have already opened one exam as main exam! Do you want to close it and open this one as main exam?" If you click the "Yes" button in response, the first exam will be closed and the newly selected exam will take its place as the "Main Exam".

Furthermore, please note that if you open an unread exam, that exam will become locked for your use only in order to prevent it being opened and read by another user. If you do not either mark an exam "read" or close the exam, it will remain locked, thereby slowing workflow. Please remember to either mark an exam "read" or to close the exam when you are finished reviewing it.

iSite Radiology Canvas Page

Once you have selected an exam to view and clicked the View Exam Tab, the iSite Radiology Canvas Page will appear, shown below. The Canvas Page is a navigational tool that provides you with quick access to diagnostic images and series, diagnostic reports, patient information and diagnostic-reading workflow. The Canvas Page should be used to select the images and series that you want to display on your diagnostic monitors as well as to gain contextual, historical information about the patient. Please note, as the Canvas Page is designed to be a navigational tool, it is not designed for diagnostic reading. All diagnostic reading should be done using your Diagnostic Monitors.

If you open an unread exam, that exam will become locked for your use only in order to prevent it being opened and read by another user. If you do not either mark an exam "read" or close the exam, it will remain locked, thereby slowing workflow. Please remember to either mark an exam "read" or to close the exam when you are finished reviewing it.

The Canvas Page has several components and myriad functions, all of which will be discussed in this section of the manual. The image of the Canvas Page, seen below, is interactive. Click on an area of the image that you wish to read about and you will be taken to the appropriate section of the manual.

PHILIPS
User: Bardach, Noah MD
iSite Radiology
Patient Directory
View Exams, 1 Exam(s) Selected
BADOH, ROGER : Sex: U, D.O.B: 12/21/1946, PID: 211360205, Procedure Code: MRSTDCM, Referring Physician: SCHIFF, DAVID
Relevant Exams
Patient History Timeline
Most Recent: 09/15/1999
Least Recent: 03/17/1999
MR; No Descriptions
09/15/1999; Acc#: 4198732
Referring: SCHIFF, DAVID
Status: PRELIM
SOPUID=1.2.840.113619.2.5.1762811907.1332.937396888.709
SAG LOC
AX RPD
AX T2
AX T1
SAG LOC
AX T2
AX T1
Ax Flair - Faster
MR; No Descriptions
07/29/1999; Acc#: 4092897
Referring: SCHIFF, DAVID
Status: PRELIM
SOPUID=1.2.840.113619.2.1.1.2702787793.734.933246846.600
Head,Sag,2D,Gradier
Head,Ax,2D,Spin Ecl
Head,Ax,2D,Spin Ecl
Head,Ax,2D,Spin Ec
Head,Ax,2D,Spin Ecl
Head,Cor,2D,Spin Ec
MR; No Descriptions
07/19/1999; Acc#: 4040345
Referring: KONDZIOLKA, DOUGLAS S
Status: PRELIM
SOPUID=1.2.840.113619.2.1.1.2702993178.680.932385818.434
Head,Sag,2D,Spin Ec
Head,Ax,2D,Spin Ecl
Head,Ax,2D,Spin Ecl
Head,Ax,2D,IR,VBw
Head,Ax,2D,Gradient
Head,Ax,2D,Spin Ecl
Head,Cor,2D,Spin Ec
Head,Sag,2D,Spin Ec

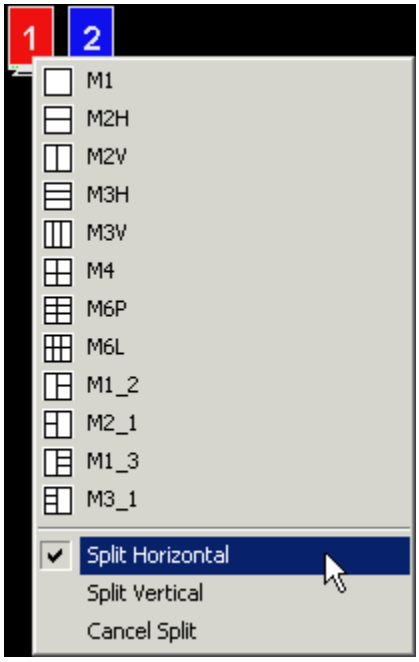
There are four main components to the Canvas Page:

1. **The iSite Radiology Control Strip:** The uppermost area of the Canvas Page is the iSite Control Strip. In most respects, the iSite Control Strip shown in the Canvas Page is the same as described in the iSite Radiology Worklists Section of this manual.

2. **Clinical Information Window:** The area directly below the iSite Radiology Control Strip in the Canvas Page is the Clinical Information Window in which information related to the patient being viewed is displayed. The patient listing includes Patient Name, Sex, Date of Birth (DOB), Patient ID number (PID), Procedure Code and Referring Physician. In addition, iSite Radiology will display the Patient Comments, History and Study Comments from the Clinical Exam Notes of the main exam. If your institution's HIS/RIS provides Admitting Diagnosis data, it will be displayed as well. This information can be highlighted using the mouse and copied to another application by clicking "Ctrl-key + C".

3. **Diagnostic Monitor Icons:** The Diagnostic Monitor Icons, shown above in red and blue, represent the physical Diagnostic Monitors connected to your iSite Radiology Workstation. For every Diagnostic Monitor connected to the workstation, there will be one Diagnostic Monitor Icon. The Icons are numbered and of different colors to avoid confusion. The color of the Diagnostic Monitor Icons corresponds to the the navigational rectangles (displaying the same colors), seen in the racks below.

   By right clicking these icons you can quickly change the hanging configuration of your diagnostic monitors. As seen below, the right-click pop-up menu allows you to choose one of the many split monitor options. You can also split your Diagnostic Monitors virtually via the last three right-click menu options. Virtual Split Monitors are discussed at length here.


1
2
M1
M2H
M2V
M3H
M3V
M4
M6P
M6L
M1_2
M2_1
M1_3
M3_1
Split Horizontal
Split Vertical
Cancel Split

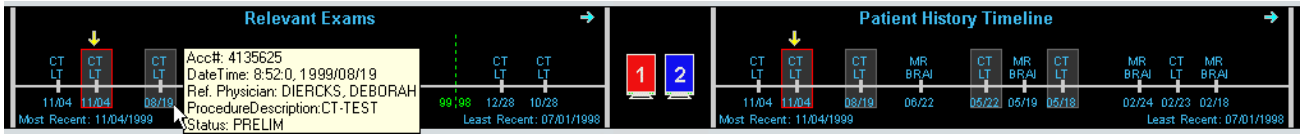
4. **Relevant Exams and Patient History Navigational Timelines:** This area of the Canvas Page, located below the Clinical Information Window, is composed of the Relevant Exams and Patient History Timeline navigational bars. These bars provide chronologically organized contextual and historical information and rapid access to related exams and priors. The navigational bars are interactive. In other words, exams can be loaded and reports can be retrieved from the listings.

5. **Diagnostic Exam Racks:** The bottom area of the Canvas Page window is composed of the Diagnostic Exam Racks. These Racks display thumbnail images and series belonging to the exam you have selected. The Exam Racks also display exams that are related to the exam you have selected. The left portion of the Exam Rack, called the Exam Summary Window, displays information about each exam including Modality, Procedure Description, Exam Date, Accession number, Referring Physician and Exam Status. Colored Navigation Rectangles indicate the images and/or series that you have selected for display in your Diagnostic Monitors. These Rectangles can be resized or moved to display other images and series.

These components, their specific uses and capabilities are discussed at length below.

Using the Navigational Timelines

The navigational timelines are an integral part of the Canvas Page. They are a fast and intuitive way of navigating through a patient's clinical history of diagnostic exams and reports. There are two timelines provided, the Relevant Exams Timeline and the Patient History Timeline.



The left timeline, called the Relevant Exams Timeline, is a chronologically ordered representation of all related exams belonging to the patient in question. For example, if you have chosen to review a CT HEAD exam, the Relevant Exams Timeline will be populated by other exams (most likely CT HEAD) that are related to the exam you are viewing. Please note that the definition of "relevant exams" is determined on a site by site basis. Ask your iSite System Administrator for more details.

The right timeline is the Patient History Timeline. This area presents a chronological listing of all of the patient's exams present on the iSite Server.

In the bottom right and left-hand corners of the timelines are the most recent and least recent exam dates. Green datelines delineate the year, as seen above. Detailed information regarding any of the exams displayed can be seen by momentarily holding your mouse cursor over the exam in question. A pop-up window, as seen

above, will display the accession number, date and time, referring physician, procedure description and status of the exam.

If more exam listings are present than can be displayed, a small blue arrow will appear in the upper right-hand corner of the timelines. You can navigate to the off-screen timeline portions by clicking this button. You can also access the off-screen timeline portions by placing your mouse over the timeline, holding down the mouse-wheel button and dragging your mouse in the desired direction.

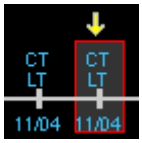
Of the exams listed in the timeline, iSite Radiology identifies exams that have been loaded into your Diagnostic Exam Racks, as well as the exams that are being displayed in your Diagnostic Monitors. Exams loaded into your Diagnostic Exam Racks have been given a gray background, as seen in the left and right exams shown below.

When an exam listing is displayed in green, no diagnostic report is present.

Exams that are being displayed in your Diagnostic Monitors are displayed with colored boxes around them, as shown below. The color of the boxes correspond to the color of the Monitor Icons displayed in the iSite Radiology Control Strip.

If images and exams from the same exam are loaded into different Diagnostic Monitors, that exam-listing will have half a blue border and half a red border as seen below.

The Main Exam listing is indicated by a yellow arrow above.



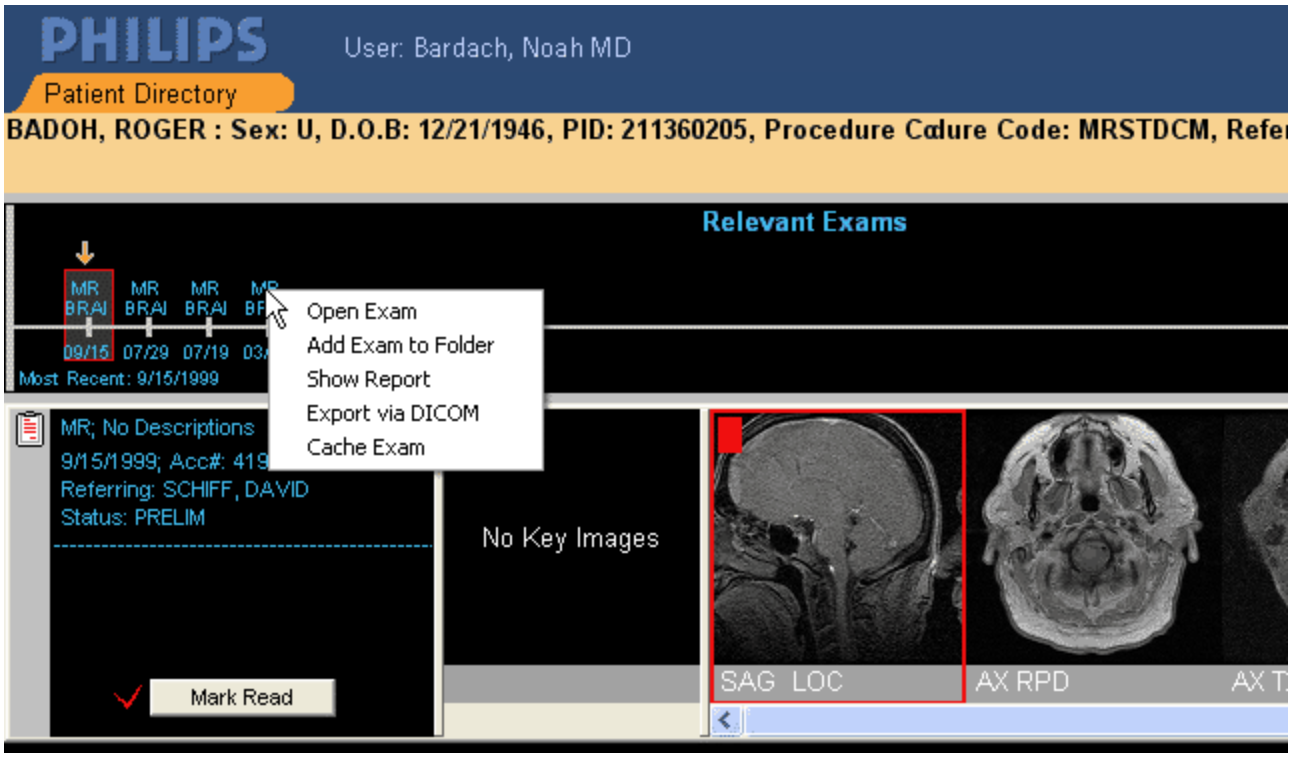
Exams that are present in your institution's archive but which are not loaded on the iSite Server are displayed with an "A" as seen below. This feature is visible if the following conditions are met:

- - Exam Date & Time is older than 48 hours
- - “A” in Exam Timeline is enabled in the System Preferences
- - Exam status is not NON-REPORTABLE
- - iQuery is configured with at least one DICOM QRP Source
- - The iSite User has iQuery Access Privileges.

To access these exams, double-click the listing in the timeline. iSite Enterprise will automatically query the available archives to retrieve the exam in question. An empty exam-row will load in the Canvas Page, as seen below, while the exam is being retrieved.

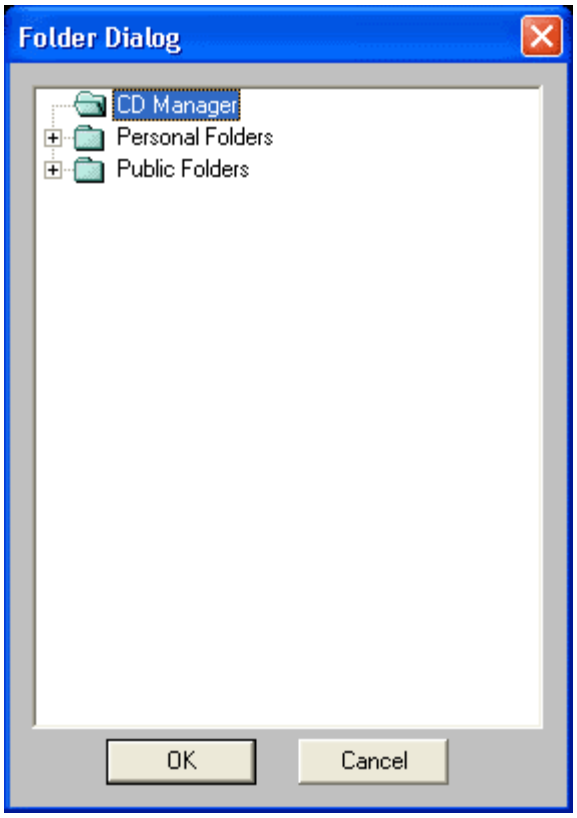
The upper portion of the Exam Information Area displays the modality, accession number, Referring Physician and Status. The bottom portion shows an estimate of how much time remains before the exam is retrieved and a display of which images are being requested. To cancel the archive retrieval, click the "Cancel" button.

There are three functions available by right-clicking an exam, as seen below.

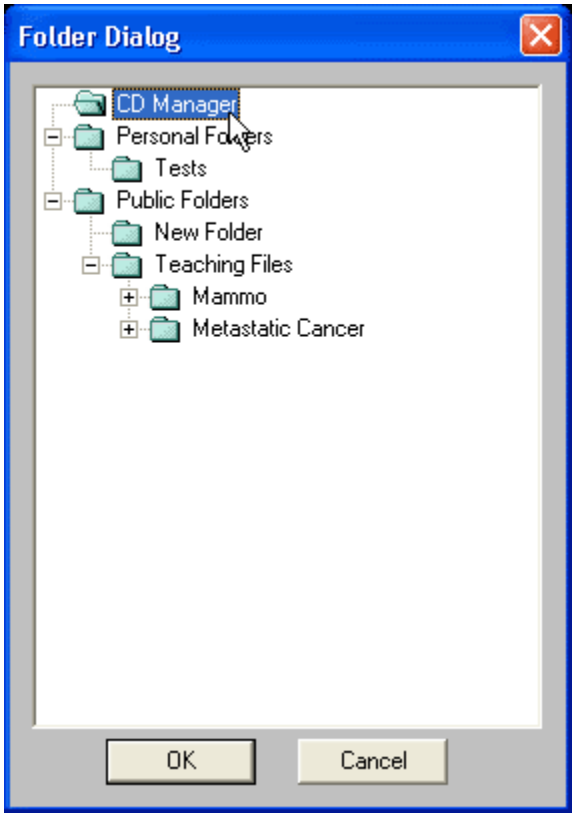


Open/Close Exam: First, exams that are not loaded into your Diagnostic Exam Racks can be loaded by right-clicking an exam and selecting "Load Exam" from the pop-up menu. The reverse is also true; exams that are currently loaded in the Diagnostic Exam Racks can be unloaded by right-clicking the exam icon on the Navigational Timelines and selecting the "Unload Exam" option from the pop-up menu. Please note that all exams can be unloaded with the exception of the Main Exam.

Add Exam to Folder: This feature allows you to add a patient exam to a folder from the Patient History Timeline. When you select the option, the following dialog will appear.

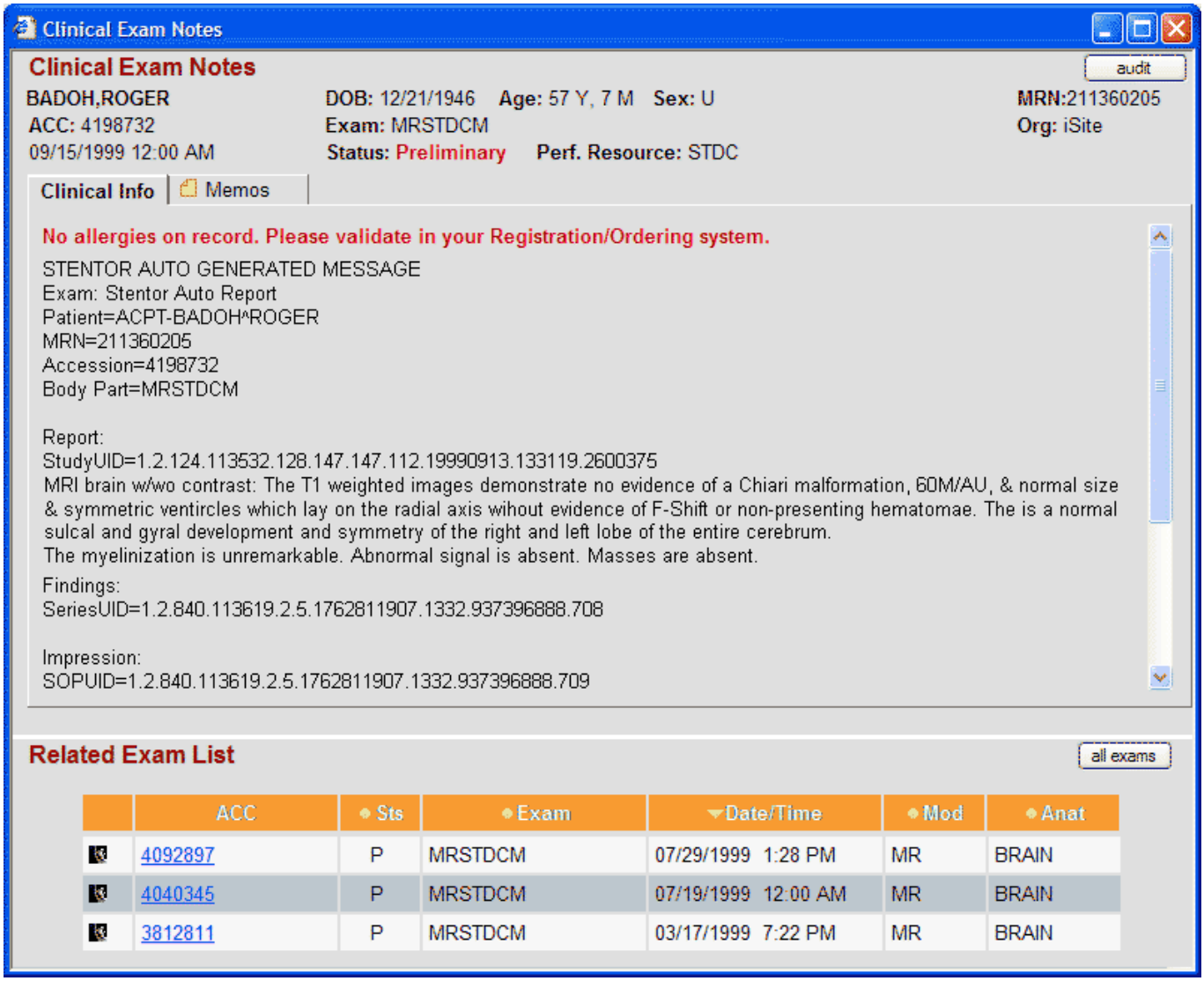


Navigate to the desired folder where you wish to place the new exam, as seen below.



Highlight the desired folder and click the "OK" button. Add the exam to the CD Manager folder if you wish to add it to a Direct Media project. The exam will be visible in the folder you have selected the next time you open it.

Show Report: The second function that can be accessed by right-clicking the exams in the Navigational Timelines is showing diagnostic reports. To view an exam's diagnostic report, right-click the exam and select the "Show Report" option from the pop-up menu. The appropriate diagnostic report will be presented in a separate, floating window. An example of a diagnostic report is shown below.


Clinical Exam Notes
Clinical Exam Notes
audit
BADOH,ROGER
DOB: 12/21/1946 Age: 57 Y, 7 M Sex: U
MRN:211360205
ACC: 4198732
Exam: MRSTDCM
Org: iSite
09/15/1999 12:00 AM
Status: Preliminary Perf. Resource: STDC
Clinical Info
Memos
No allergies on record. Please validate in your Registration/Ordering system.
STENTOR AUTO GENERATED MESSAGE
Exam: Stentor Auto Report
Patient=ACPT-BADOH^ROGER
MRN=211360205
Accession=4198732
Body Part=MRSTDCM
Report:
StudyUID=1.2.124.113532.128.147.147.112.19990913.133119.2600375
MRI brain w/wo contrast: The T1 weighted images demonstrate no evidence of a Chiari malformation, 60M/AU, & normal size & symmetric ventircles which lay on the radial axis wihout evidence of F-Shift or non-presenting hematomae. The is a normal sulcal and gyral development and symmetry of the right and left lobe of the entire cerebrum.
The myelinization is unremarkable. Abnormal signal is absent. Masses are absent.
Findings:
SeriesUID=1.2.840.113619.2.5.1762811907.1332.937396888.708
Impression:
SOPUID=1.2.840.113619.2.5.1762811907.1332.937396888.709
Related Exam List
all exams
ACC
Sts
Exam
Date/Time
Mod
Anat
4092897 P MRSTDCM 07/29/1999 1:28 PM MR BRAIN
4040345 P MRSTDCM 07/19/1999 12:00 AM MR BRAIN
3812811 P MRSTDCM 03/17/1999 7:22 PM MR BRAIN

The type of information provided in the report will vary from institution to institution. However, certain information, such as the patient's name and ID number, will always be displayed when available.

Navigate through the report using the scroll bar at right. There are several sections of information including the Report, Findings, Impression, participating radiologists'

contact information, Diagnosis, History, Comments and the contact information of the Requesting and Attending Physicians.

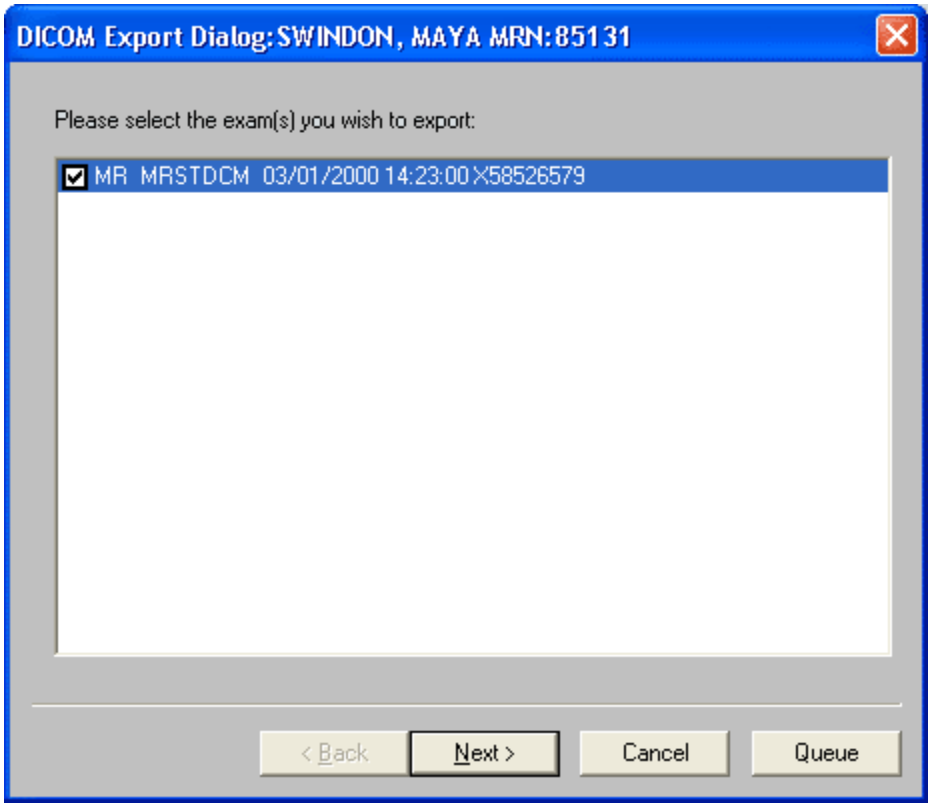
If related exams are present on the iSite server, these will be listed below, as seen above. This list of exams is interactive. An exam's report can be viewed by clicking its accession number.

If you wish to view a list of all exams belonging to the patient in question click the "all exams" button. To toggle back to a list of only related exams, click the "related exams" button.

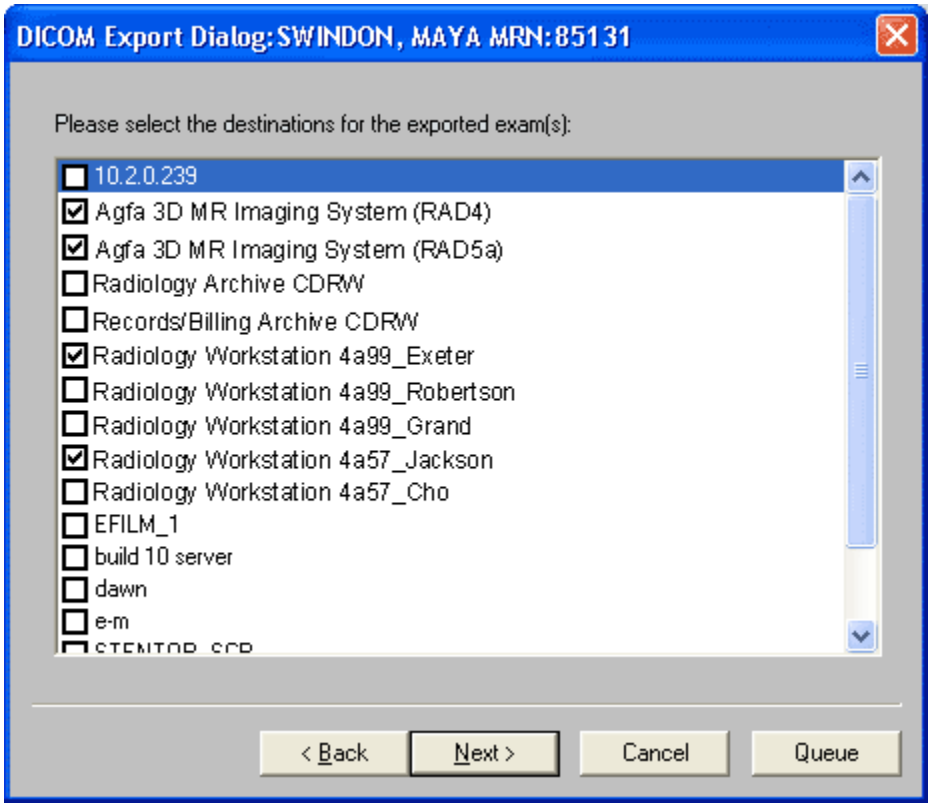
When you are finished reviewing the report, close the window by clicking the close button at upper-right.

Export Via DICOM: The third function available from the right-click menu is Export via DICOM. This function is for use in sending exams or images to a DICOM device such as a 3-D imager or a CD-ROM burner. External DICOM devices must be specified and connected by your iSite System Administrator. If no devices are connected, this option will be grayed out.

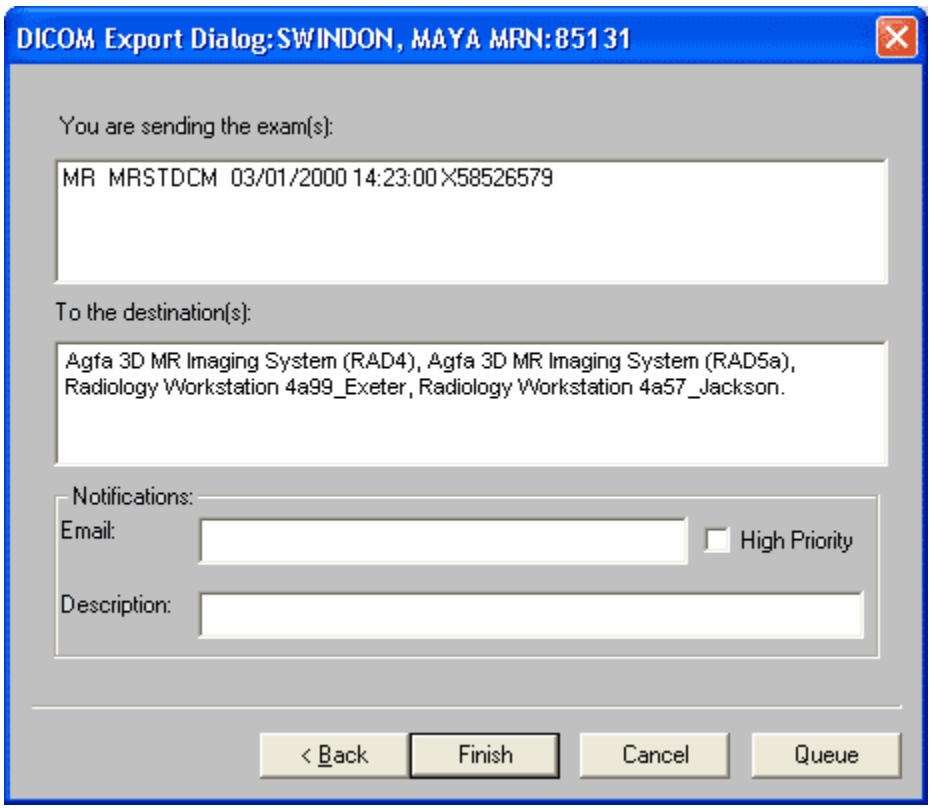
When the option is available, iSite will display a list of associated exams which are available for export, as seen below.


DICOM Export Dialog: SWINDON, MAYA MRN: 85131
Please select the exam(s) you wish to export:
MR MRSTDCM 03/01/2000 14:23:00 X58526579
< Back
Next >
Cancel
Queue

Select the exams that you wish to export and then click the "Next>" button. The following screen will appear.



Select the DICOM device or devices to which you want the exam(s) sent and then click the "Next>" button. The following window will appear.



Revise the exam and destination information in the dialog to confirm that they are correct. When you are sure enter in additional information if desired. You can notify any number of people via email by typing in their addresses in the email section of the Notification box. You can also add a description or denote the exam as "High Priority." If you would like to check the queue to see how busy it is, click the "Queue" button. If you are finished, click the "Finish" button. You will be returned to the diagnostic racks.

You can return to any part of the Export Via DICOM process at any time by clicking the "<Back" button. You can cancel out of the Export Via DICOM process at any time by clicking the "Cancel" button.

Cache Exam: This feature allows you to cache an exam to your local machine or other associated location, such as a mapped drive. When you select this option, iSite will download the exam to a location specified in the Local Exam Caching Section of the User Preferences. If you want to see the progress of the download, click the Locally Cached Exams folder in the iSite Folder List.

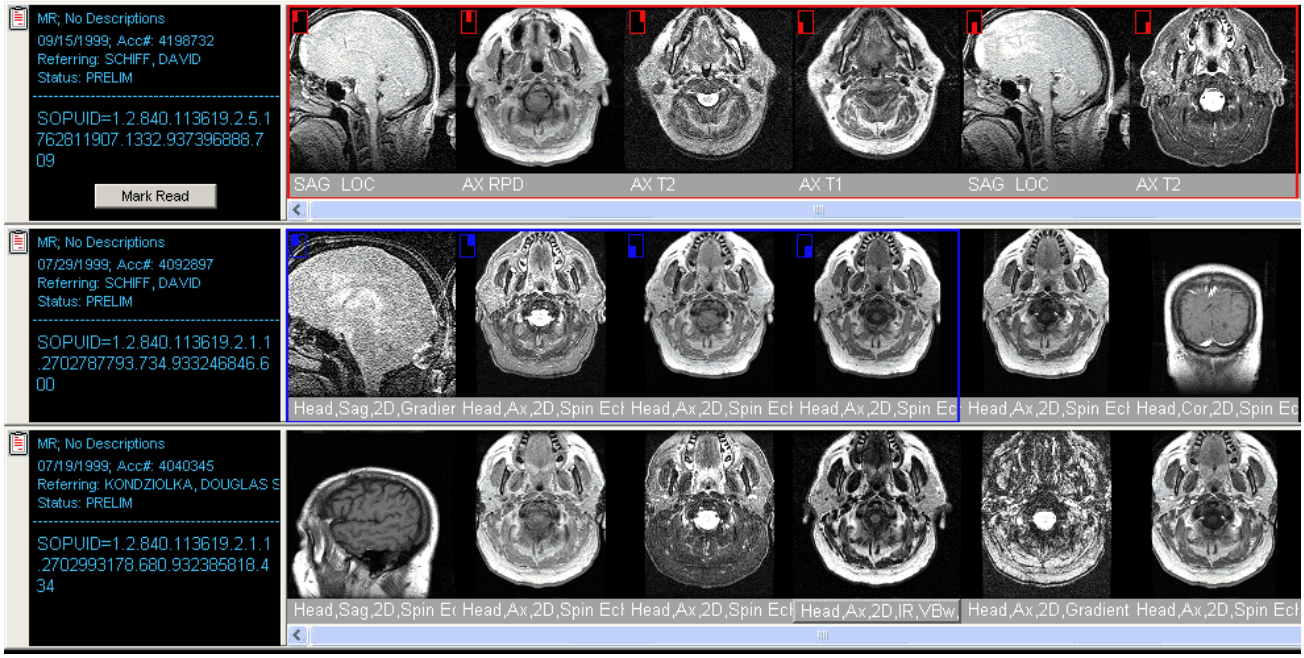
Exams that are present in your institution's archive but which are not loaded on the iSite Enterprise Server are displayed with an "A" as seen below.

To access these exams, double-click the listing in the timeline. iSite Enterprise will automatically query the available archives to retrieve the exam in question. An empty exam-row will load in the Canvas Page, as seen below, while the exam is being retrieved.

The upper portion of the Exam Information Area displays the modality, accession number, Referring Physician and Status. The bottom portion shows an estimate of how much time remains before the exam is retrieved and a display of which images are being requested. To cancel the archive retrieval, click the "Cancel" button.

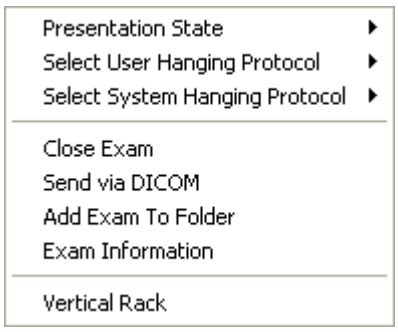
Using the Diagnostic Exam Racks

The Diagnostic Exam Racks, seen below, are a powerful tool within the Canvas Page. There are many functions that can be performed and, as such, it may take you a short while to become fully accustomed to operating in the Racks. Take time to carefully read this section and, if necessary, ask your iSite System Administrator for additional help or call Philips Customer Care, 24 hours a day, seven days a week at (877) 328-2808.



The Diagnostic Exam Racks contain the following elements:

1. **Exam Summary Window:** In this area, located at the left of each Exam Rack, information about each exam is displayed. The information includes modality, body part, date of acquisition, accession number, referring physician and status, as seen above. When available, the "Impressions" portion of the report is displayed beneath the exam information, as seen in the third exam row in the image above. Right-clicking on the margin of the exam information area provides access to various additional features as seen below.



2. Unread exams will display the "Mark Read" button as seen in the top exam. Click this button once you have completed your diagnostic read of the exam and the exam will be marked "Read".
3. **Thumbnail Images:** This area, to the right of the Exam Summary Window, contains the thumbnail diagnostic images and/or image series of an exam. Each image or image series has an information bar below it, which displays information about the particular image or series in question. Double-clicking an image or series in this area will create an enlarged Expanded Window of the image or series. Right-clicking a thumbnail image provides access to advanced image manipulation tools.
4. **The Navigation Rectangles:** These interactive, resizable rectangles, pictured above in red and blue, correspond to the images being displayed on your Diagnostic Monitors. Not only do the rectangles provide a visual representation of the exams being displayed, they can also be used to load other images, series or exams into your Diagnostic Monitor.

The Diagnostic Exam Racks have two main functions. The first of these functions is to display and help you arrange exams for diagnostic review in your Diagnostic Monitors. The second function is to give you a quick contextual view of the exam you are reviewing and the patient's other relevant exams.

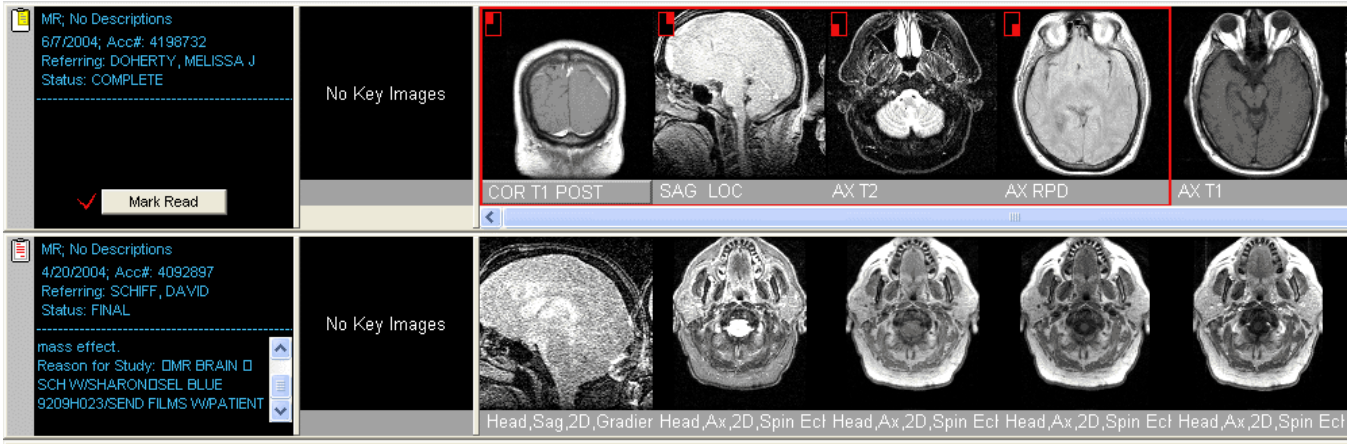
The uppermost exam rack of the Diagnostic Exam Racks displays the exam from the MyWorklist that needs to be reviewed. The exam racks below display exams that are relevant to the exam you are reading. Please note that the definition of a "relevant exam" is determined on a site-by-site basis. For more information, ask your iSite System Administrator.

Key Image Series

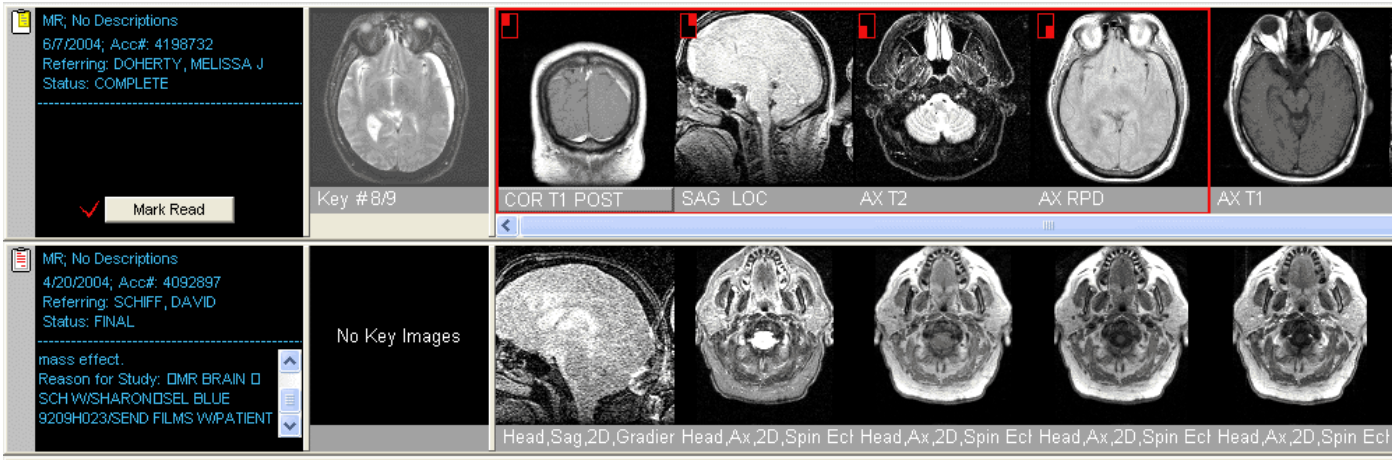
Key Images are images that have been marked by a user as "key." The Key Image Series option, set in the General Preferences section of the Preferences page, allows you to view all of the key images for the current Presentation State of an exam in one single "Key Image Series."

This unique series composed solely of Key Images is located to the left of the exam images when the rack is viewed in horizontal mode and directly above the exam images when the rack is viewed vertically. The window in which the Key Image Series is displayed cannot be moved or resized.

The Key Image Series updates in real time. When an exam is first viewed, for example, there will be no key images in the Key Image Series, as seen below.



As images in the exam are marked "Key Images" by hitting the Space-bar, the Key Image Series will be populated simultaneously, as seen below.

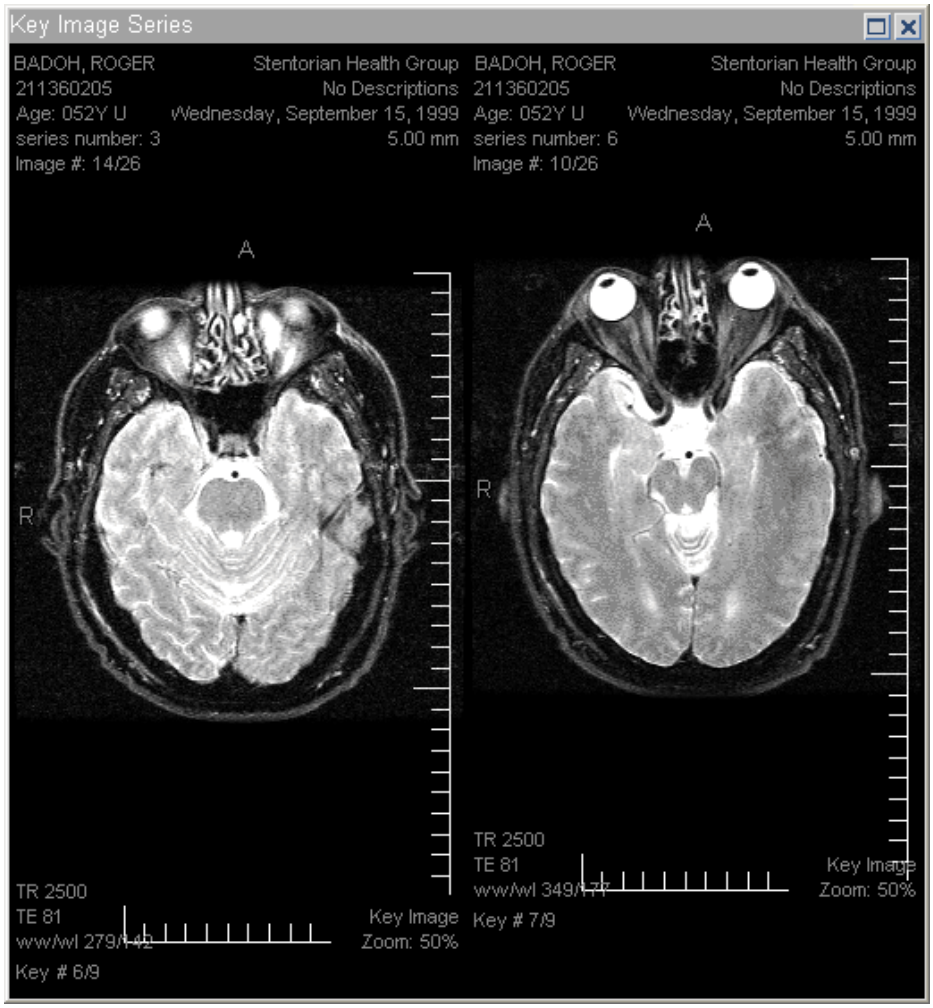


From the image above, you can see that the Key Image Stack has nine key images in it and that the one being displayed is the eighth one of nine. All of the image manipulations (measurements, window width and level, annotations, etc.) will be displayed in the Key Image Series exactly as on the exam image with the exception of scout lines, as seen in the example above. Just as the Key Image Series will be updated as key images are selected, if a key image designation is removed from an image, the image will be removed from the Key Image Series.

The Key Image Series can be navigated just like a normal series, using the mouse's wheel or the up and down arrow keys to cine through slices. The Tab and Tab+Shift keys can be used to cycle fully through the Series. Key Image Series displayed in the Canvas Page Racks have limited right-click menus and image-manipulation functionality. More functionality is available by double-clicking the Key Image Series, as discussed below.

Double-clicking the Key Image Series will expand the image from the rack into a Key Images Pop-up Window, seen below in 1:1 and 1:2 Multi-Image Mode.

Key Image Series
BADOH, ROGER
211360205
Age: 052Y U
series number: 3
Image #: 14/26
A
Stentorian Health Group
No Descriptions
Wednesday, September 15, 1999
5.00 mm
R
TR 2500
TE 81
ww/wl 279/142
Key # 6/9
Key Image
Zoom: 100%



The Key Images Pop-up Window provides access to all key images of an exam, just like the Key Image Series in the rack. However, unlike the Key Image Series in the rack, the Key Image Pop-up Window can be manipulated more thoroughly.

The Key Images Pop-up Window supports the following right-click menu options:

- Window Width/Level – When selected will be applied to all images belonging to the same Series
- Measurements
- Annotations (Excluding Spine Labeling)
- Image Processing
- Multi Image Mode
- Zoom Presets – When selected will be applied to all images belonging to the same Series
- Removing Key Images
- Save Image/Windows As…
- Print to Paper / Print to Film (will only allow printing of 'Key Image Only' of the Entire Exam option. The Selected Window option will be disabled)
- Delete All Measurements and Annotations (when measurements and annotations are present)

The following right-click menu options are **NOT** available in the Key Images Popup Window:

- Scout Mode
- Localizer Mode
- Clone
- Play Cine Loop (or manual fast cine / fast paging option)
- New Link and any other Image Link Functionality
- Adding New Key Images
- Sort/Split

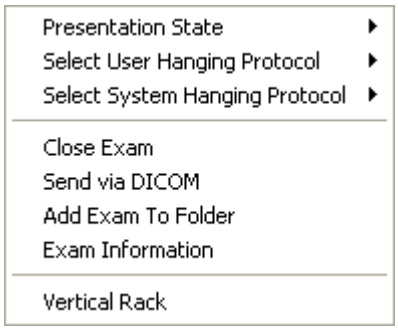
The Key Images Series can be displayed in your Diagnostic Monitors by dragging the Key Series Pop-up Window from the Canvas Page into the Diagnostic Monitors

The Exam Margin and Pop-up Menu:

The exam margin contains the diagnostic report button, located at the top. In addition, several notification icons may appear in this portion of the Canvas Page during the course of your iSite Radiology session.

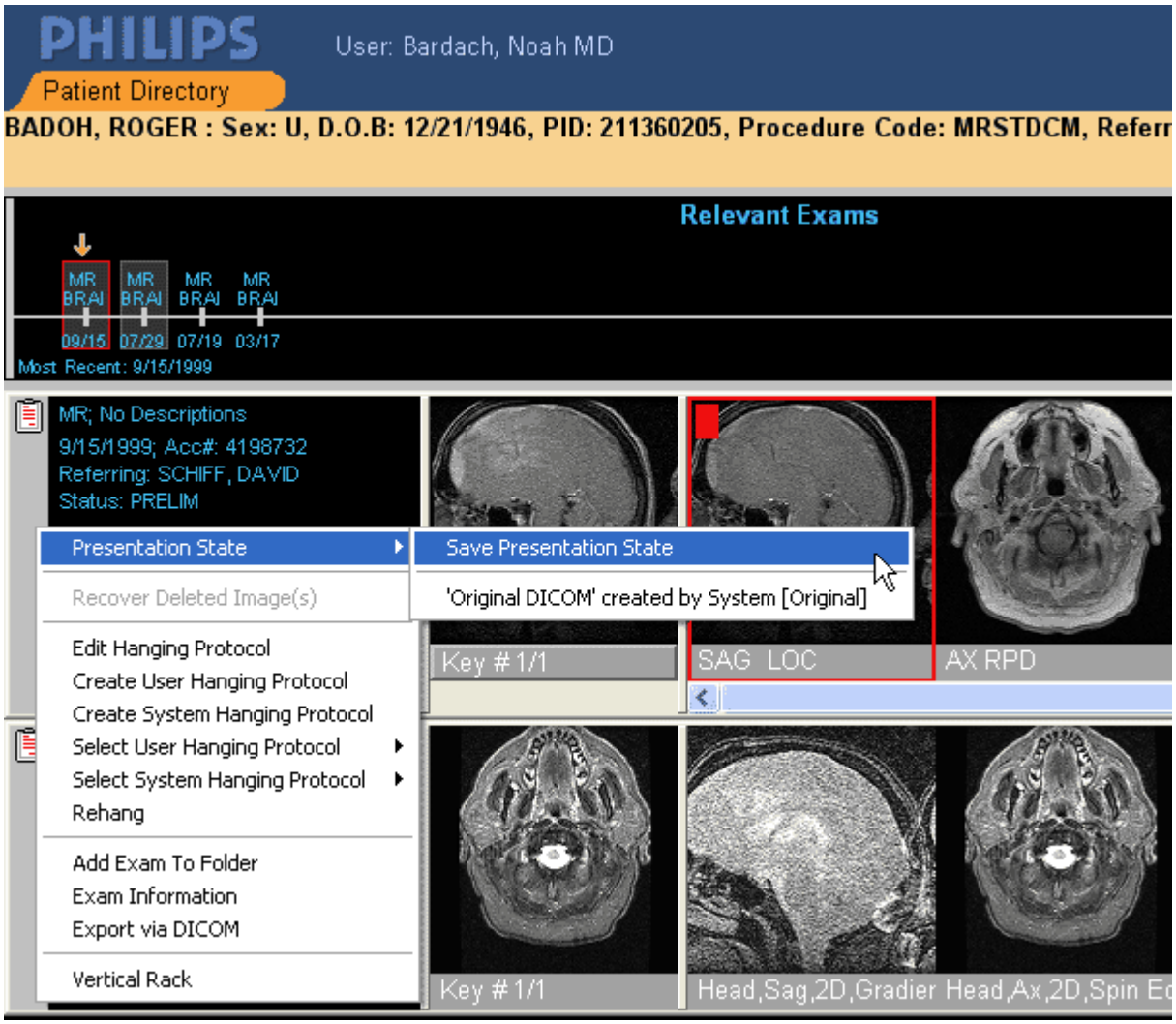
The diagnostic report button ( ) is located at the top of the margin. From top to bottom, the icons are the Warning Icon ( ), the New Images Arrived ( ), image added to exam in the last 30 seconds), Remote Study ( ) and Presentation State Loaded ( ). Please note that these icons will only appear if necessary. In other words, you may never see them.

Right-clicking Exam Margin of an exam reveals a pop-up menu, shown below, that provides access to several important functions including Presentation States, Edit Protocol, Rehang, Send via DICOM, Exam Information and Vertical/Horizontal Rack toggle. If you have marked key images and/or created presentation states for the exam in question, you can access them here. You can also restore the default presentation state by selecting the "Rehang" option.

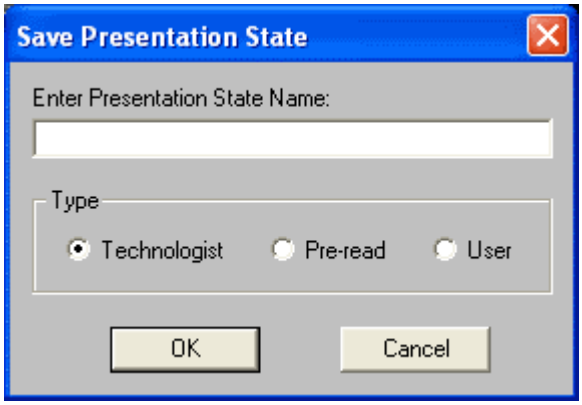


Viewing or Creating Presentation States: If you wish, you can easily view a presentation state or create a presentation state for later viewing. To view a presentation state of an exam, right-click the Exam Summary Window and select the presentation state you wish to view from the "Presentation State" sub-menu. The presentation state "'Original DICOM' created by System" will always be present. Please note that if additional images have been added to this exam since a presentation state was created, that state will not be visible. Rather, iSite Radiology will display a message indicating that "The presentation state was not loaded because new Images have arrived since the presentation state was saved." In addition, be advised that Scout Lines, the Localizer Tool and Image Processing Tool adjustments are not preserved in presentation states.

To create a new presentation state, arrange, annotate and/or measure the exam as desired and then right-click the Exam Summary Window, as seen below.



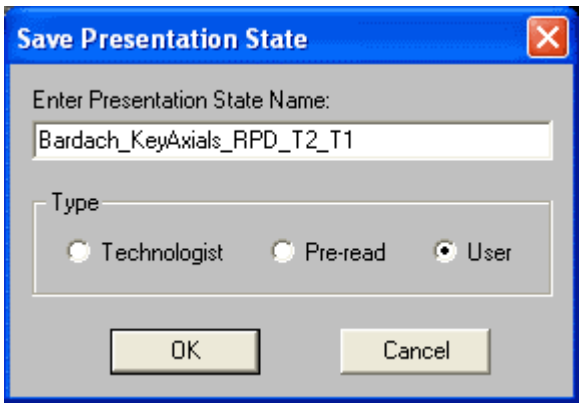
Choose the "Presentation State" option from the pop-up menu and then choose the "Save Presentation State" option from the sub-menu. The following window will appear.



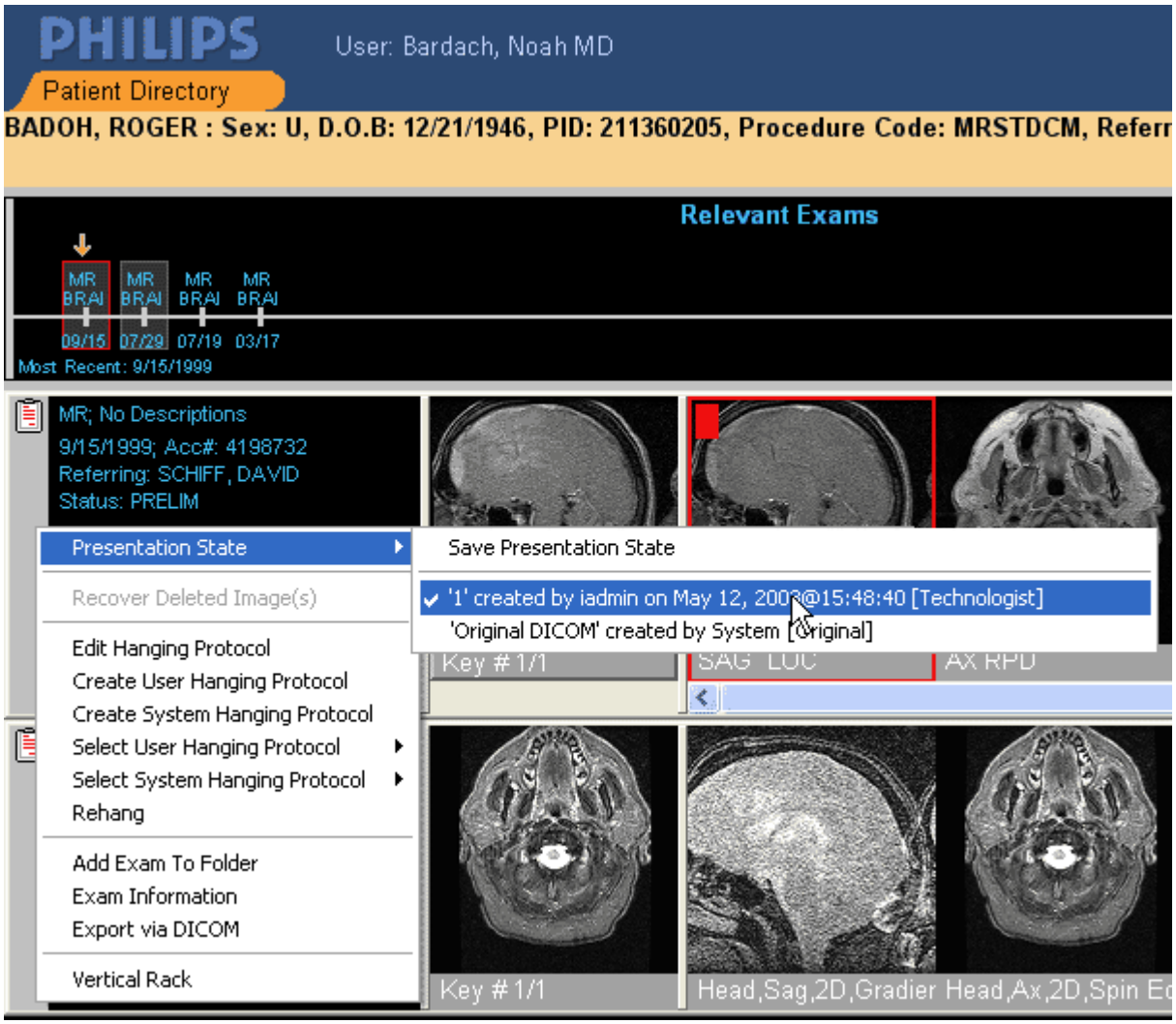
The type of presentation state should be specified according to your role. If you are a technologist, choose the "Technologist" option. If you are an intern, select the "Pre-read" option. If you would like to create a presentation for personal use only (such as a teaching session) click the "User" option. Please note that this presentation state will never be displayed automatically. Radiologists presentation states are created when a radiologist marks an exam "read" using the "Mark Read" button in the Diagnostic Exam Racks.

The type of presentation state that you enter will determine the weight of the presentation state in terms of automatic display in iSite Radiology and iSite Enterprise. For example, if no presentation states have been created, the initial presentation state displayed is the 'Original DICOM' state. If a technologist has created a presentation state, that will be presented initially instead of the Original DICOM. If an intern has created a presentation state, it will be displayed initially instead of the technologist's presentation state. If a radiologist has created a presentation state, that will trump the other presentation state and will be presented initially instead of the technologist's presentation state.

When you finish filling in the necessary information, as seen below, click the "OK" button.



Your presentation state will be saved and will be available for future viewing by you and your colleagues when right-clicking on that exam's Exam Summary Window, as seen below. When a exam presentation state is being displayed, the Presentation State icon ( ) will be shown in the Exam Margin.



Please note that iSite Radiology will check to see if new images have been added to the exam in question while you were creating a presentation state. If new images are present, you will not be able to save the presentation state but will have to reload the exam and begin again.

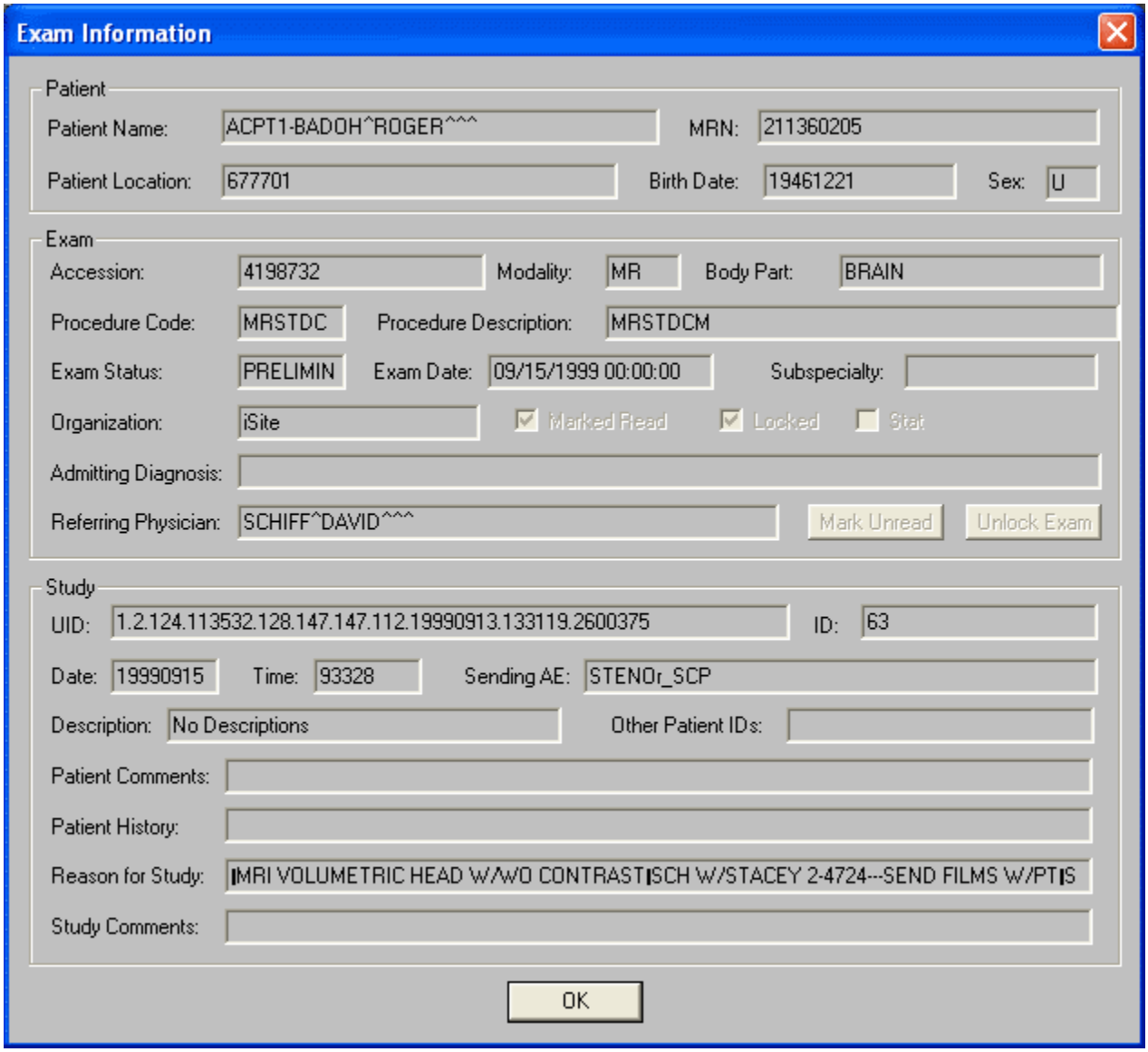
In addition, if the user opens an exam that has a Technologist or Pre-Read Presentation State, the Presentation State will override certain features of the Hanging Protocol for the exam. The Hanging Protocol settings Invert, Clones, and WW/WL will not be applied. If a Hanging Protocol is selected, edited or created for this type of exam, all of the Hanging Protocol features will be applied, regardless of any Presentation States.

If the exam has only a Original DICOM Presentation State or only a User Presentation State, then the Hanging Protocol will be applied when the exam is opened in the Canvas Page. If a Presentation State is selected, edited or created from this exam, the Presentation State will be applied regardless of any Hanging Protocol.

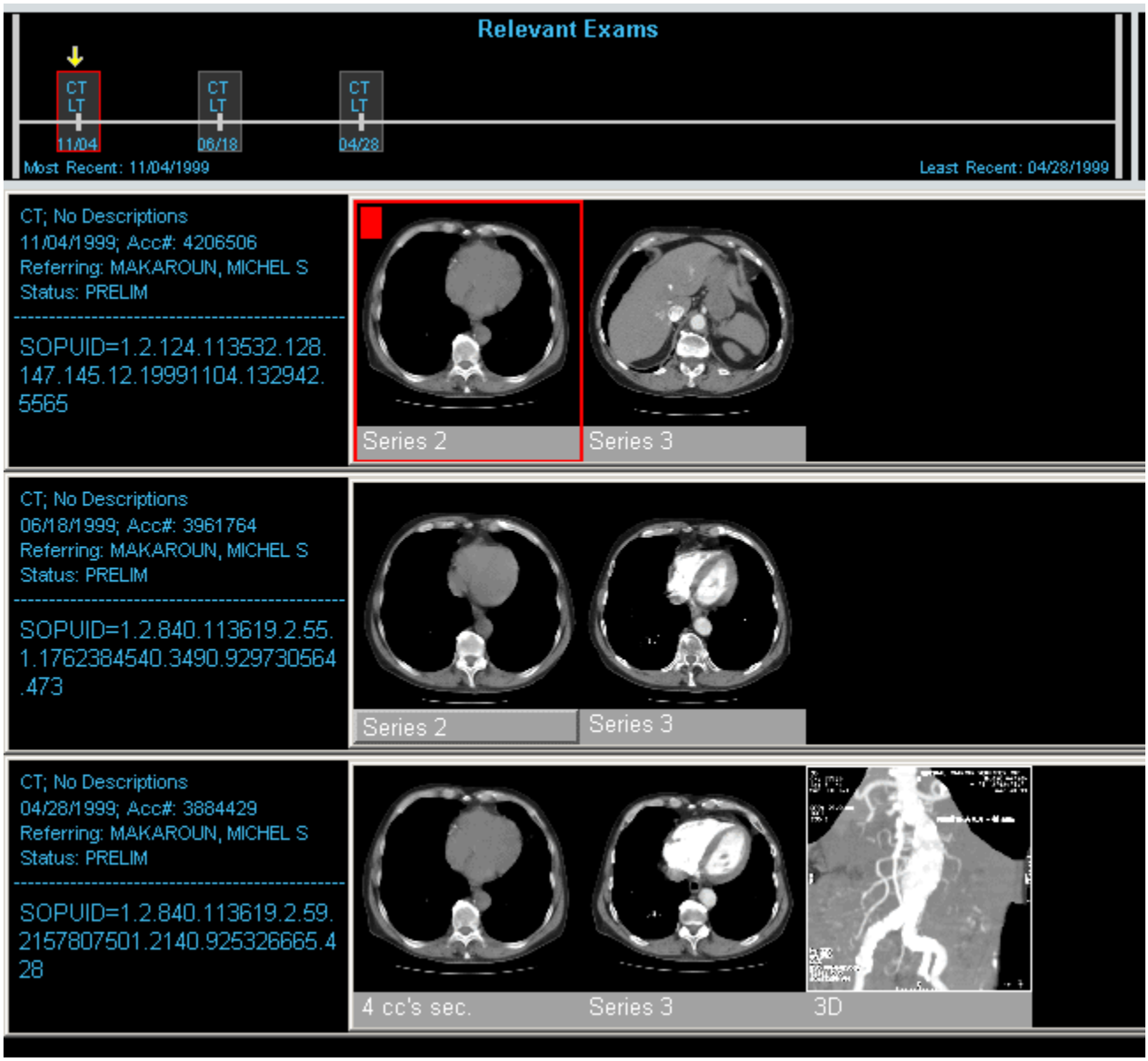
Hanging Protocols: Hanging Protocols are a key feature of iSite Radiology. They are discussed at length in the second to last section of this chapter.

Send via DICOM: This feature is described above, in the section detailing the Navigational Timelines section.

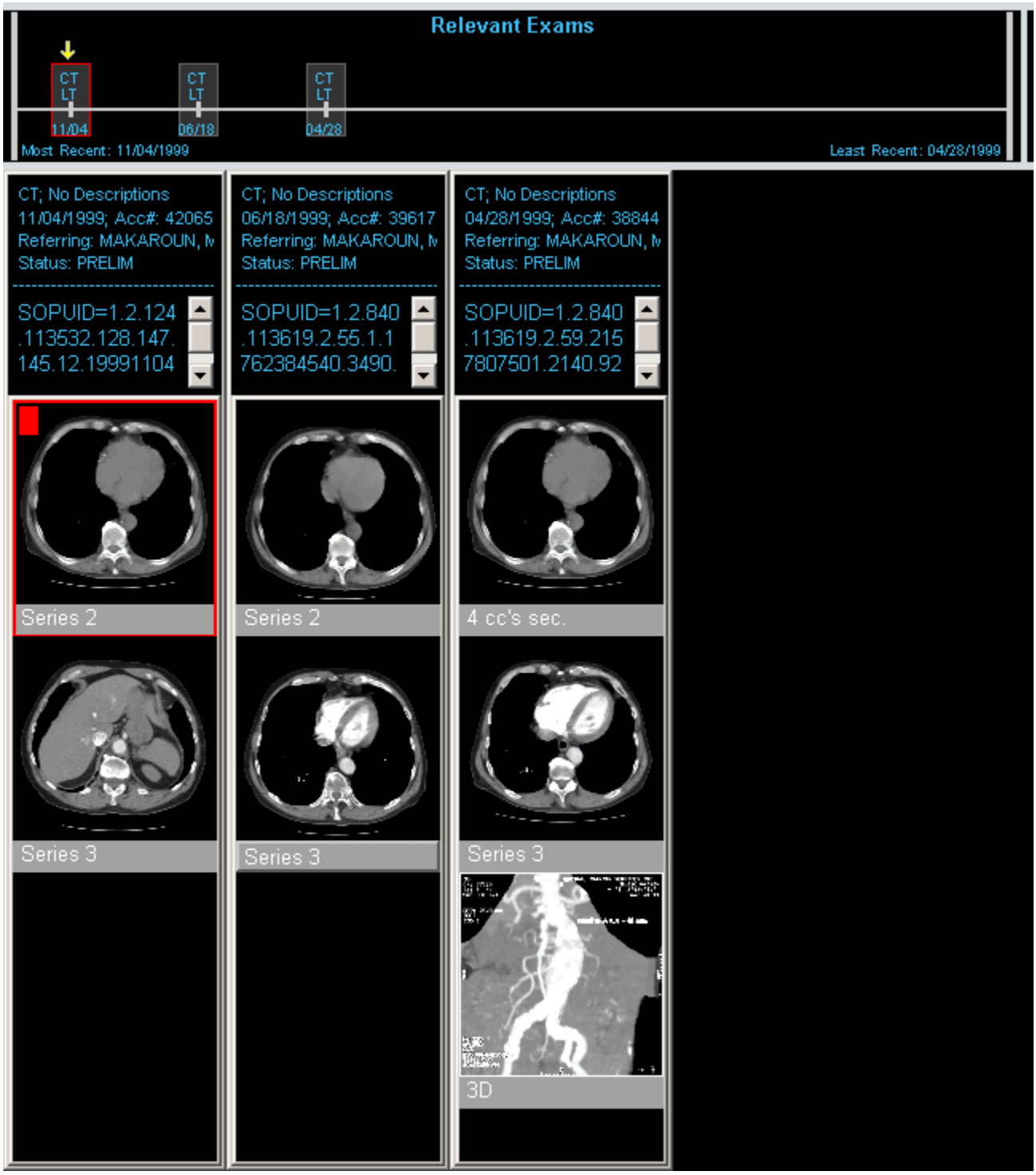
Exam Information: This feature will display a pop-up dialog in which the current exam's information is displayed, as seen below.



Vertical/Horizontal Rack: This toggling option allows you to quickly reconfigure the Canvas Page to view exams vertically or horizontally, as seen below. The default setting can be set in your preferences.

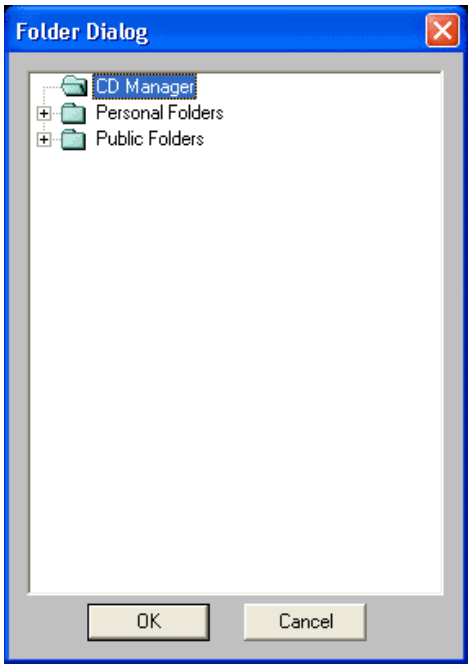


Horizontal Configuration

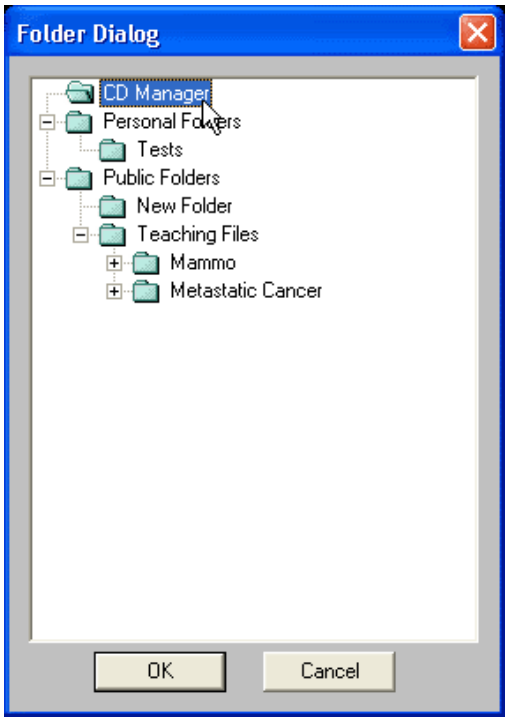


Vertical Configuration

Add Exam to Folder: This feature allows you to add a patient exam to a folder from the Patient History Timeline. When you select the option, the following dialog will appear.



Navigate to the desired folder where you wish to place the new exam, as seen below.



Highlight the desired folder and click the "OK" button. Add the exam to the CD Manager folder if you wish to add it to a Direct Media project. The exam will be visible in the folder you have selected the next time you open it.

Marking an Exam "Read"

When you have finished reading an unread exam, you will want to mark that exam "read." To mark an exam read, click the "Mark Read" button, shown below, in the Exam Summary Window to the left of the exam rack.

Upon clicking the "Mark Read" button, iSite Radiology will automatically load the next exam in your worklist. Please note that only unread exams will display the "Mark Read" button. If the button does not appear in the Exam Summary Window, the exam may have already been read. In addition, exams can be marked "Read" various times until their status is "Finalized".

You can also toggle the "Marked Read" designation on and off for the active exam using the F3 hot-key.

If you notice that an exam status is "Complete" and the "Mark Read" button is not present, please bring the issue to the attention of your iSite System Administrator.

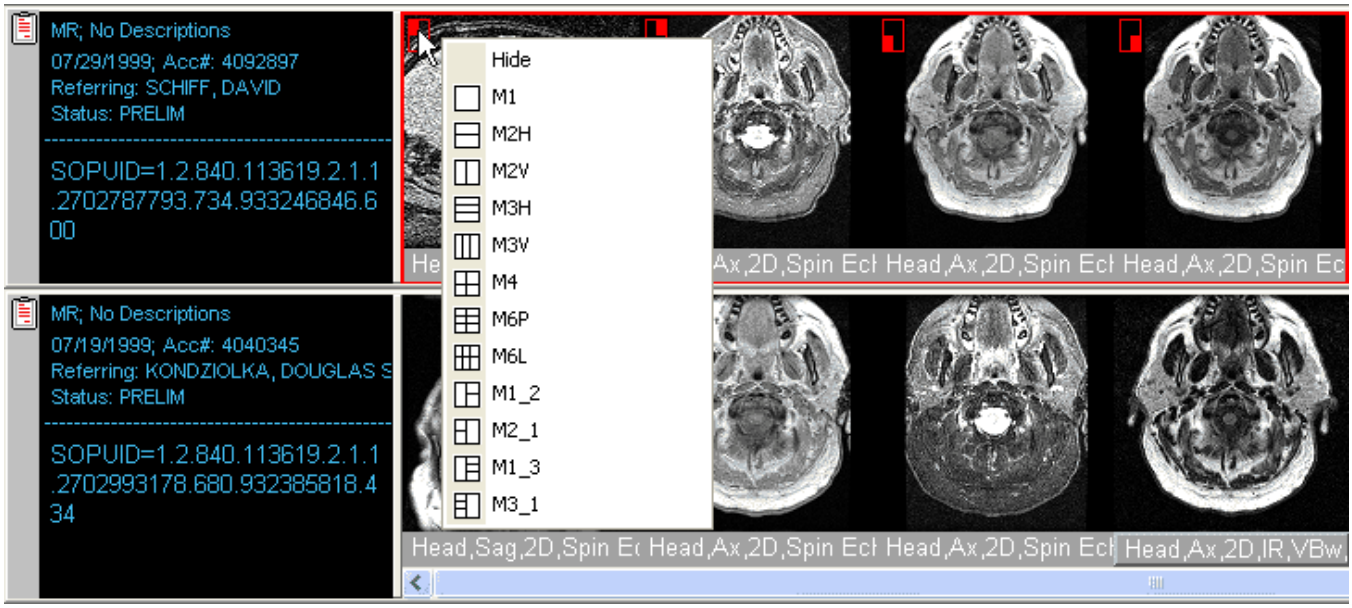
Using the Navigation Rectangles

The Navigation Rectangles provide dynamic and interactive flexibility when hanging exams on your Diagnostic Monitors. By moving the Rectangles or placing images and series within them, you can quickly rehang exams in your Diagnostic Monitors.

Each Navigation Rectangle contains one or more Layout Icons. These small icons ( ), located in the upper left-hand corner of each image or series within a Rectangle, describe the position of that particular image or series on your Diagnostic Monitor. The Layout Icons will change dynamically when you resize the Rectangle or change the Monitor Layout of your Diagnostic Monitor.

The size of the Navigation Rectangles is determined by the layout of your Diagnostic Monitors. For example, if you have chosen to layout your Diagnostic monitor with a 6:1 configuration, the Rectangle will be 6 images or series in length.

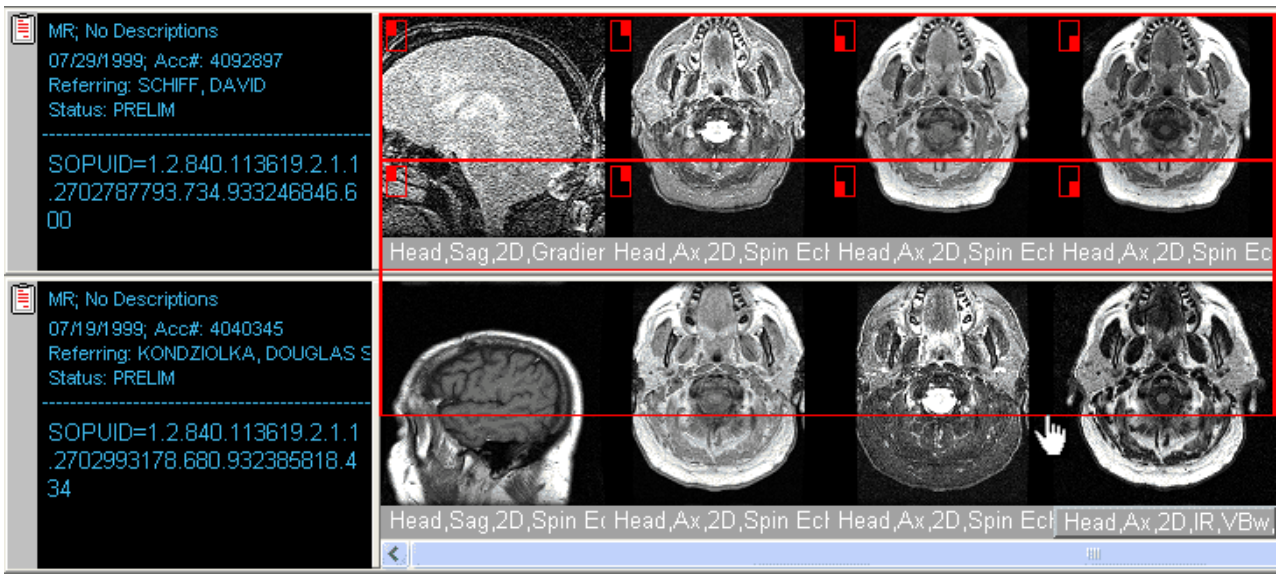
The size of the Rectangles and, simultaneously, the layout of the Diagnostic Monitors can be easily changed by right-clicking the rectangle. Doing so produces a pop-up menu as seen below.

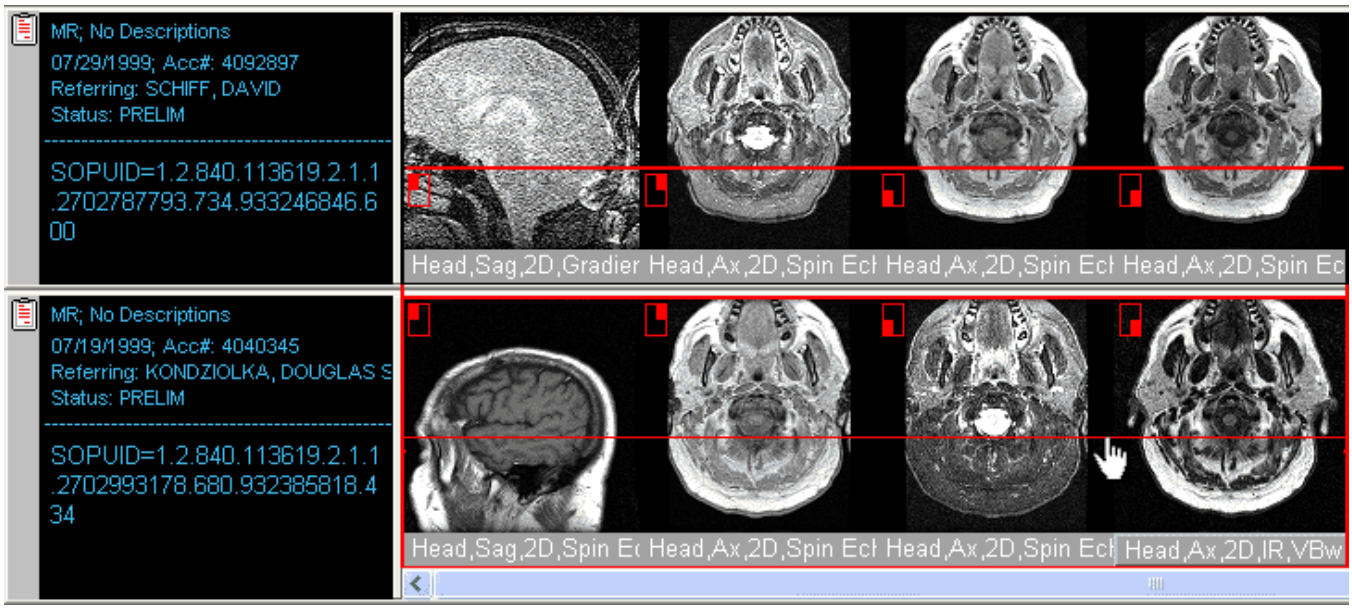


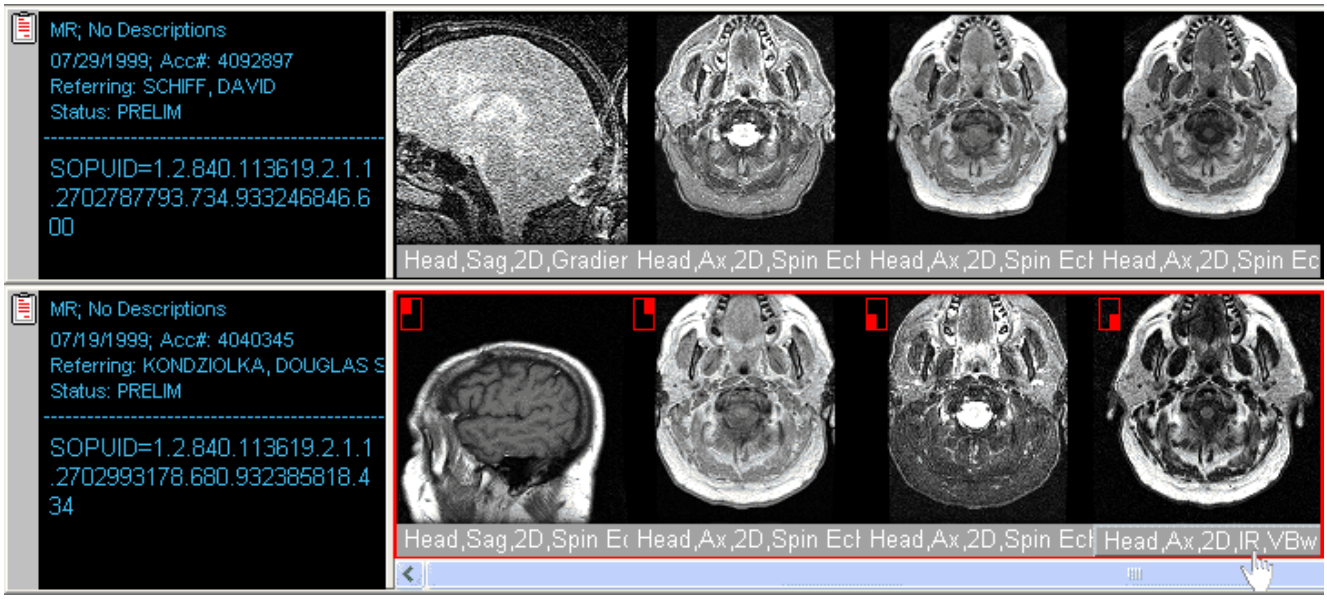
Select the desired monitor layout and both the Diagnostic Monitors and the rectangles will be automatically resized. If you wish to hide the Rectangle, click the "Hide" option.

The Rectangles can be used in two different ways to load images, series or exams into your Diagnostic Monitors. The first method is to drag images and series into the Rectangle, as shown in the previous subsection. The second method is to drag the Rectangle itself over the images or series you wish to display in your Diagnostic Monitors.

To drag the Navigation Rectangle to different images and series or to an entirely new exam, place your mouse on the edge of the Rectangle, click and drag it to a new location, as shown in the illustrations below.



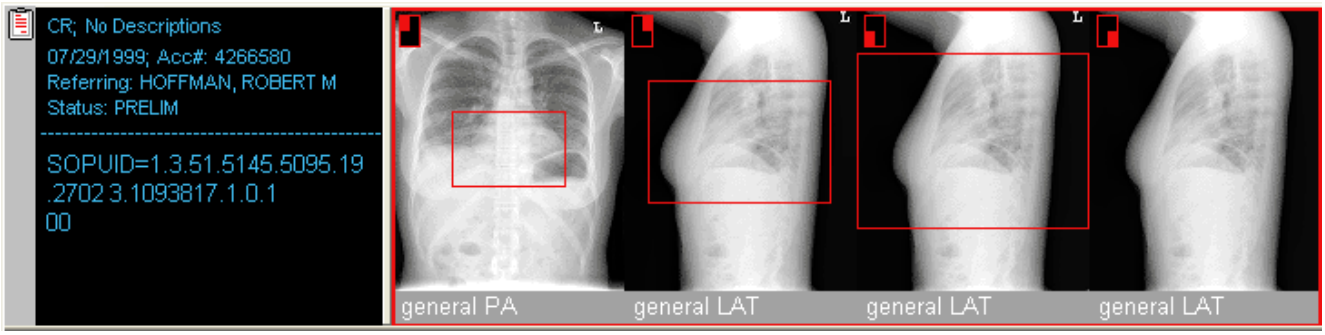




The Rectangle has been designed to "snap" into place, meaning that when you approach the final destination to which you are moving the Rectangle, it will snap into place. Once the Rectangle has been placed, the Diagnostic Monitor in question will reload with the new images, series or exam. Please note that when a Rectangle is dragged from one exam to another, if the Hanging Protocol dictates a different monitor setup, the Rectangle will change size to accommodate it. To quickly swap the contents of your monitors, you can drag one of the monitors onto the first image or series in the second and the Navigational Rectangles will swap places.

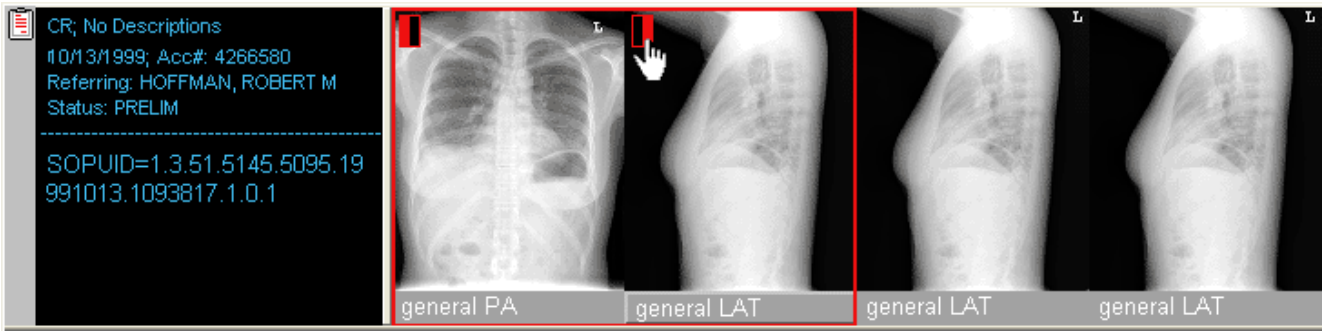
The Navigation Rectangles also provide a contextual view of the images or series being displayed on your Diagnostic Monitors. As seen in the images below, the "Zoom

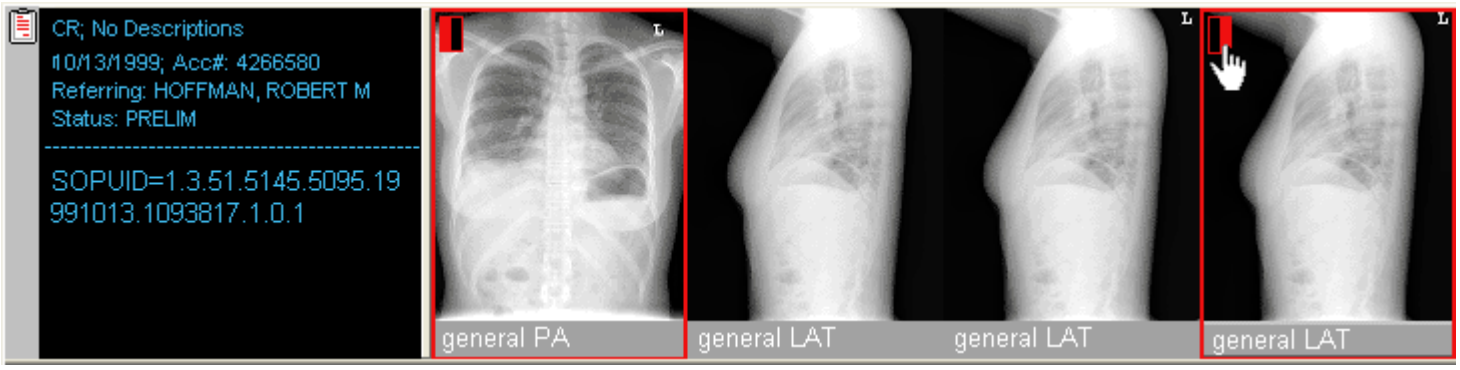
Rectangle" (the smaller rectangle superimposed on images and series) gives a contextual view of the Diagnostic Monitor display in relation to the image as a whole.



Splitting Navigational Rectangles

Navigational Rectangles do not need to be contiguous and can be split according to your preference. You can split a single Navigational Rectangle into two parts, for example, with each part of the Navigational Rectangle residing in a separate Patient Exam. To split a Navigational Rectangle, left-click any Layout Icon except the first and drag the separated portion of the Navigational Rectangle to the desired images or series, as seen in the two images below.



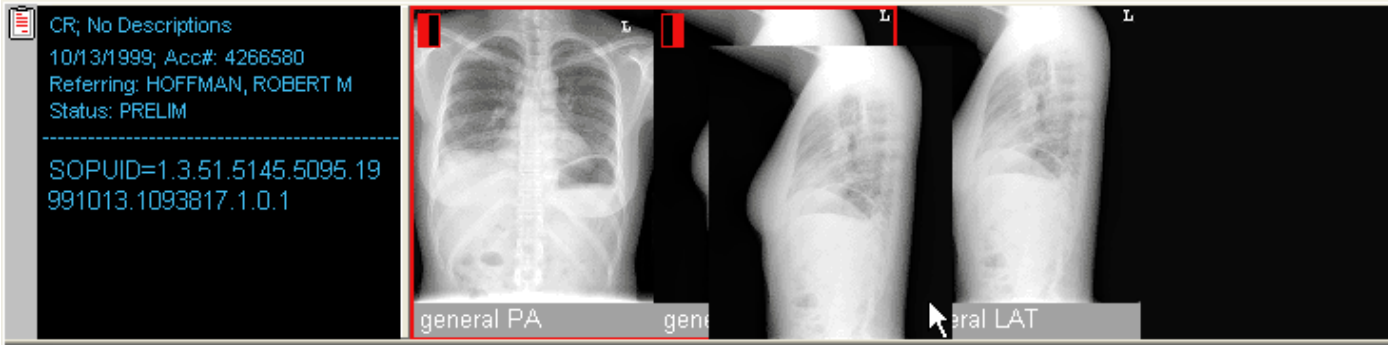


To recombine a Navigational Rectangle, simply drag the split portion to the image directly adjacent to the other portion.

Please note, if you wish to disable the split Navigation Rectangle feature, you may do so in the General Preferences section of the iSite Radiology User Preferences.

Reordering Images and Series in an Exam

Images in any given rack can be easily reordered by clicking and dragging the image or series to the desired location. To move an image or series, click the information bar at the bottom of the image or series and drag it to the new location, as shown below. This functionality provides an easy way to change the content of your diagnostic monitors. If an image or series is dragged into one of the navigational rectangles, it will be displayed on the corresponding diagnostic monitor.



Release the mouse when you reach the desired location and the image or series will be inserted at that point.

Thumbnail Manipulation

While the Navigational Console is not meant for Diagnostic Reading, you can still manipulate the thumbnail images and expanded windows in the Canvas Page.

The following adjustments can be made to Thumbnail images in the Rack:

- **Image and Series Expansion:** Individual images and series can be expanded into larger floating windows by double-clicking on the image or series in question. There is no limit to the amount of rack images or series that can be simultaneously expanded. Note that additional image manipulation options are available when an image or series from the rack has been expanded to a larger floating window.

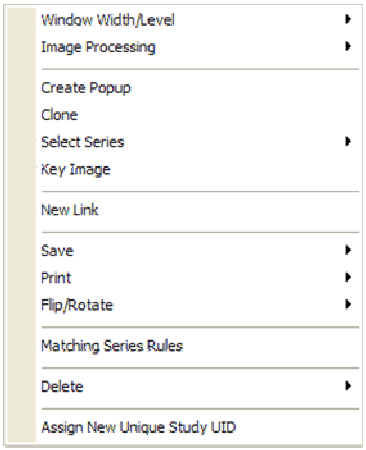
- **Window Width and Level (WW/WL):** To adjust the Window Width and Level settings of the images and series in the racks, click the left mouse button and drag the cursor horizontally across the image to increase or decrease the Window Width or vertically across the image to increase or decrease the Window Level. Please note that when you adjust the window width and level for a series, all slices in that series are affected. If you want to adjust the window width and level or one slice in a series, hold down the "L" Key while making the adjustment.

- **Viewing Slices in MRs and CTs**: You can scroll through the slices in a series either one-by-one (Cine mode) or rapidly (Fast Cine). For a frame-by-frame

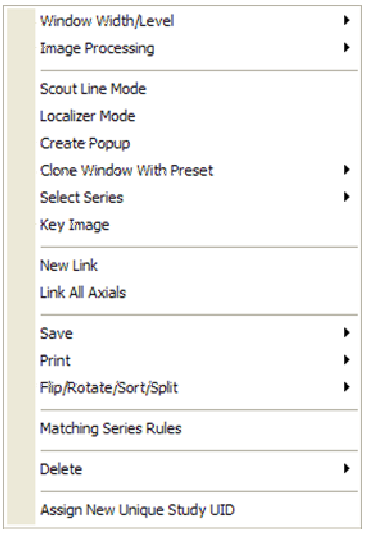
review, slowly scroll the mouse-wheel. For rapid review, hold down the mouse-wheel and drag the mouse forward or backward.

- **Advanced Image Manipulation Options:** Advanced image manipulation options can be accessed by right-clicking any image or series and selecting the desired item from the pop-up menu. The pop-up menus are shown below. The functions available from the right-click pop-up menu are: Window Width and Level settings (CTs also have preset settings for Abdominal, Bone, Brain, Liver, Lung and Mediastinum), invert image, flip/rotate image, clone image (only CTs), print, series selection, remove window, link, and mark key image. These functions will all be discussed in detail in the Diagnostic Monitors section of this manual.

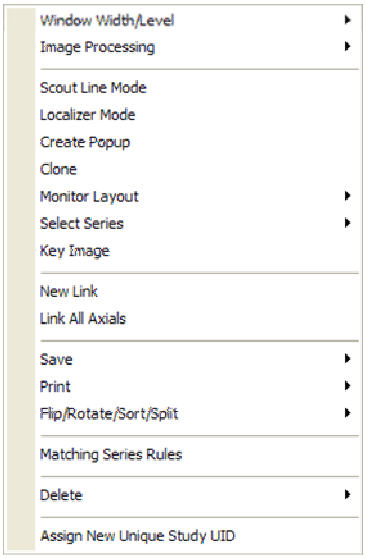
Diagnostic Exam Rack Right-Click Menus



CR Menu



CT Menu



MR Menu

Expanded Window Manipulation in the Canvas Page

Expanded Windows are created in the Canvas Page by double-clicking a Thumbnail image or series in the Diagnostic Racks, as discussed above. Expanded Windows provide additional image manipulation functionality not available with thumbnail images. In addition, these windows can be arranged according to your preference by dragging them to the desired location in the Canvas Page.

Along with the image-manipulation features available for the Thumbnails, images and series in Expanded Windows can be manipulated in other important ways. The following additional image manipulation features are available in Expanded Windows:

- **Zoom:** To zoom into a plain film image, simply roll your mouse-wheel forwards. The image will zoom in at the location of your cursor. To zoom out, roll your mouse-wheel backwards. To zoom into an image-series, such as an MR or CT exam, left-click the mouse while holding down the Control-key and drag your

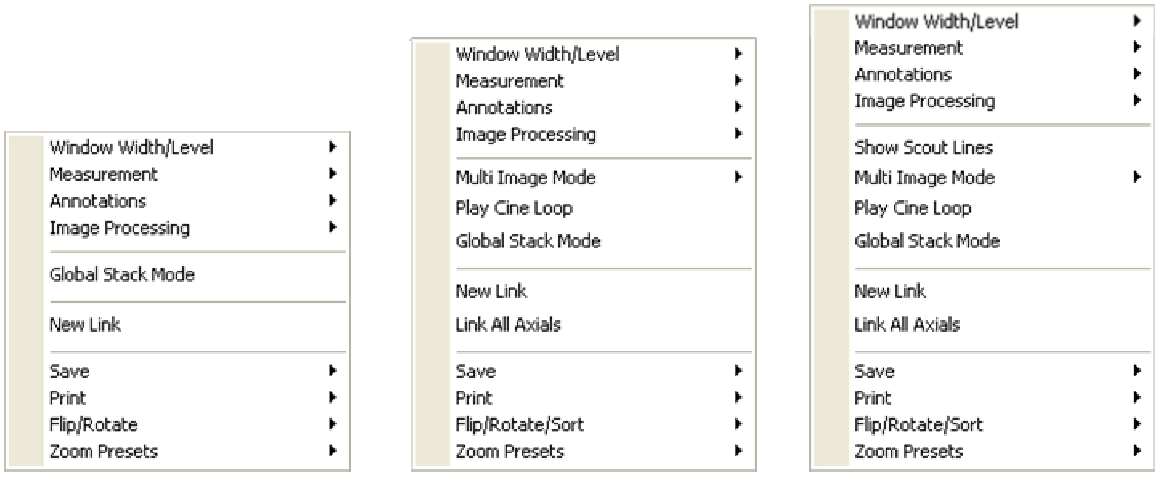
mouse forwards to zoom in or backwards to zoom out.

- **Pan:** To pan through a plain film image, simply hold down your mouse-wheel button while dragging your mouse in the desired direction. To pan through an image-series, such as an MR or CT exam, left-click the mouse while holding down the Alt-key and drag your mouse forwards to zoom in or backwards to zoom out.

- **Advanced Image Manipulation:** All advanced image-manipulation options are available by right-clicking on an image or series. This action will produce a context-sensitive pop-up menu displaying the various tools available for the modality in question. There are three different pop-up menus, one for plain films, such as CRs, SCs and OTs, one for CTs and one for MRs. Each menu is modality-specific and you should be aware that certain features are only available with certain modalities. These functions will all be discussed in detail in the Diagnostic Monitors section of this manual.

  As discussed above, the advanced image manipulation options available in an Expanded Window are more robust than those available with the Thumbnails in the Diagnostic Exam Racks. As such, their respective pop-up menus are distinct. Options that are available from the Expanded Windows and not the Thumbnails are Annotations, Measurements and Clone (for Plain Films and MR exams), as seen below. These functions will all be discussed in detail in the Diagnostic Monitors section of this manual.

Expanded Window Pop-up Menus



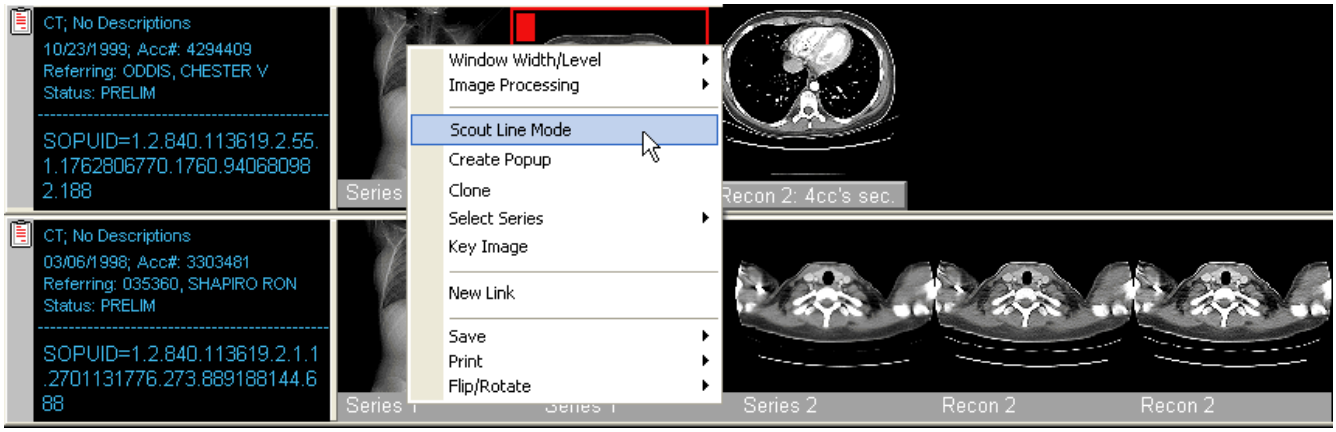
CR Menu **CT Menu** **MR Menu**

Please note that the pop-up menus available from the Canvas Page are different from those which are available by right-clicking an image or series in the Diagnostic Monitors. Diagnostic reading performed on diagnostic monitors

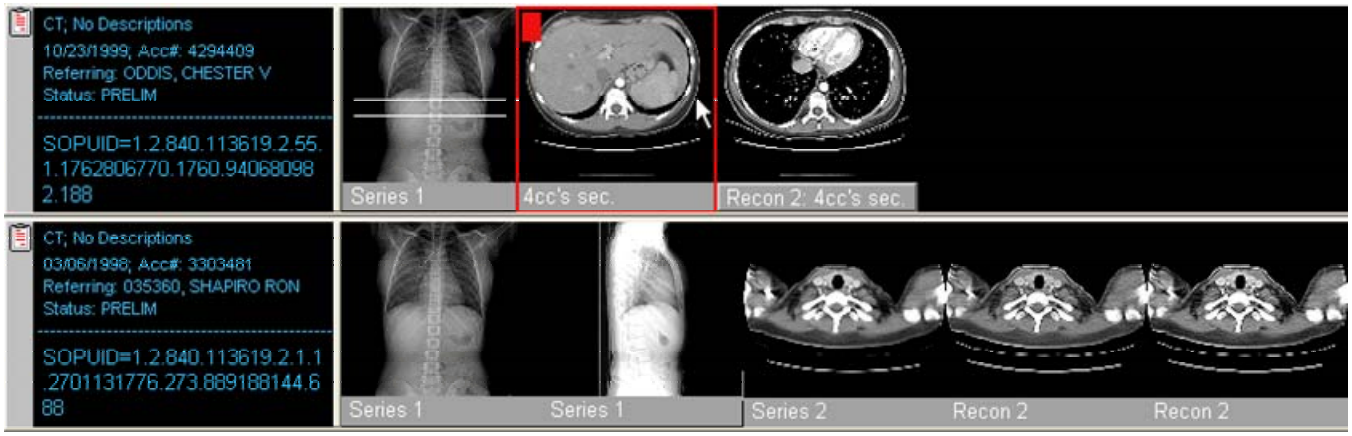
offers additional options in the pop-up menus. For more information on the pop-up menus seen by right-clicking an image or series in the Diagnostic Monitors, please see the corresponding section.

Using Scout Views

This feature allows you to display scout lines on any series by right-clicking the series and selecting "Scout Mode" from the pop-up menu, as seen below.



Scout Lines will be added to the image you clicked, as seen below.



When Scout Mode is active, a check-mark will be visible next to the "Scout Mode" item in the pop-up menu.

In order to leave the image selected for displaying scout lines unobstructed, these reference lines will only appear when the cursor is passed over another image or series. As the other series are cined, the corresponding scout line will highlight to indicate the cursor's location with respect to the designated image, as seen below.

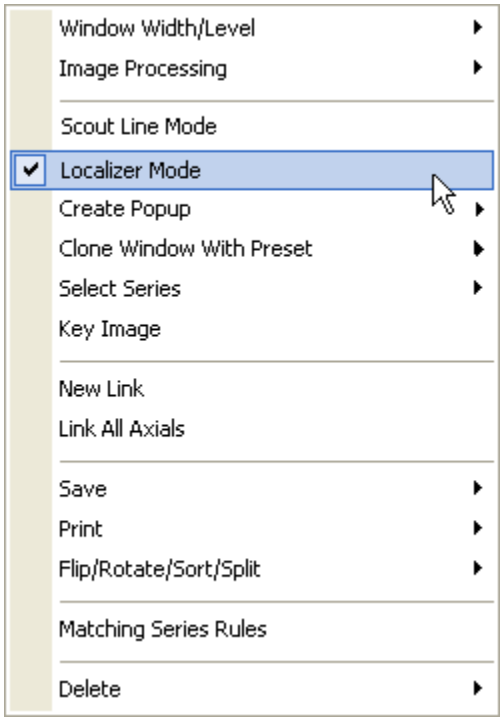
To remove the scout lines, right-click the scout image and deselect the "Show Scout Lines" option.

The Scout Mode tool works in conjunction with the Localizer Mode, explained below.

Localizer Mode:

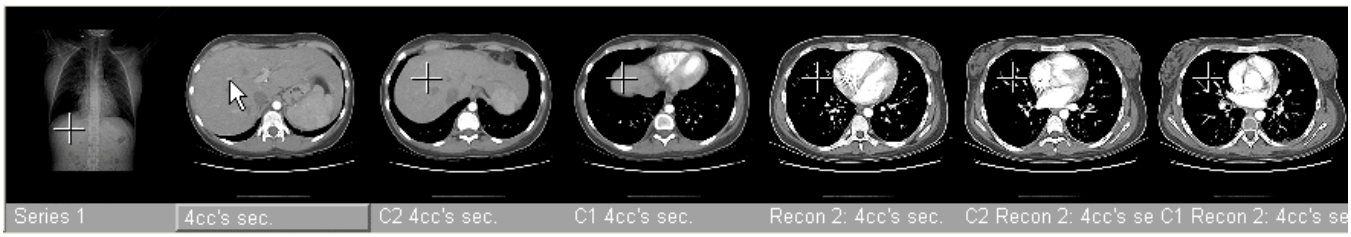
Like the Scout Lines, the localizer tool helps you visualize and navigate to a location in multiple series with different orientations.

To initiate the Localizer function for a specific series or image, right-click and select "Show Localizer", as seen below.

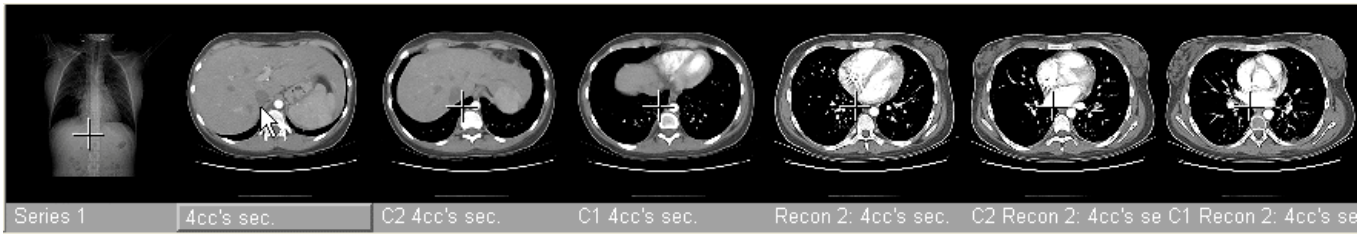


When you select the "Show Localizer" option, a crosshair (+) will be placed in every image or series of an exam at x/y coordinates that correspond to the location of your cursor. As you move the cursor over the specified image or series, all crosshairs will move in sync.

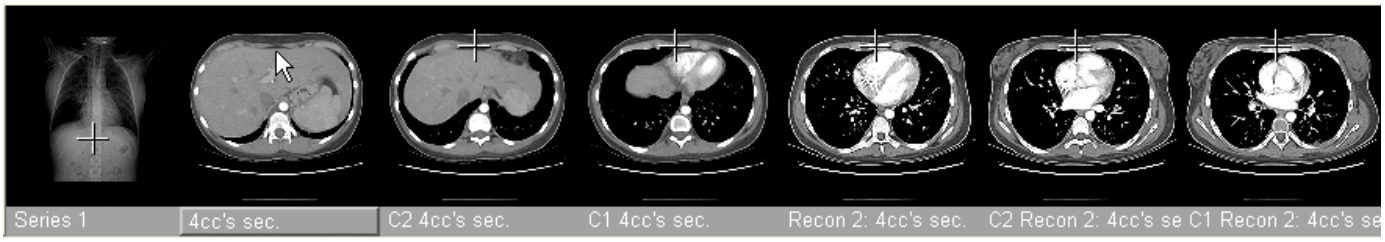
In the examples below, when the cursor is passed over the first series at left, crosshairs appear at the corresponding location on every other series in the exam.



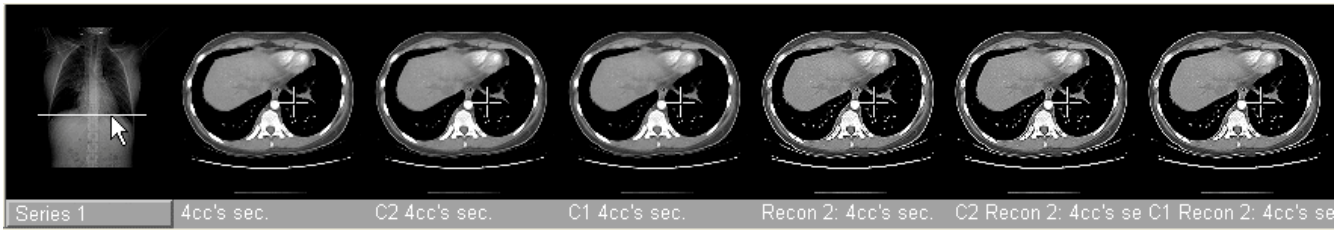
Moving the cursor from its initial position back towards the spine...



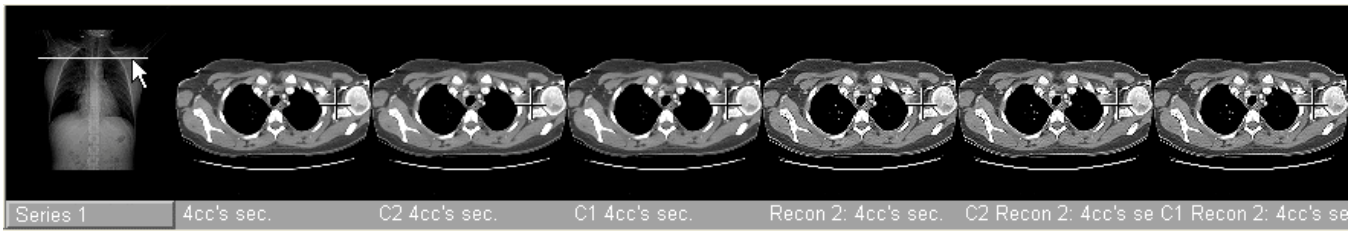
And back up again, with all crosshairs moving in sync.



As with the Link feature, the Localizer can be used to navigate through multiple series simultaneously. By holding down the left mouse-button and dragging the cursor, all exams with the same DICOM frame of reference, regardless of their specific orientations, will move in synch.



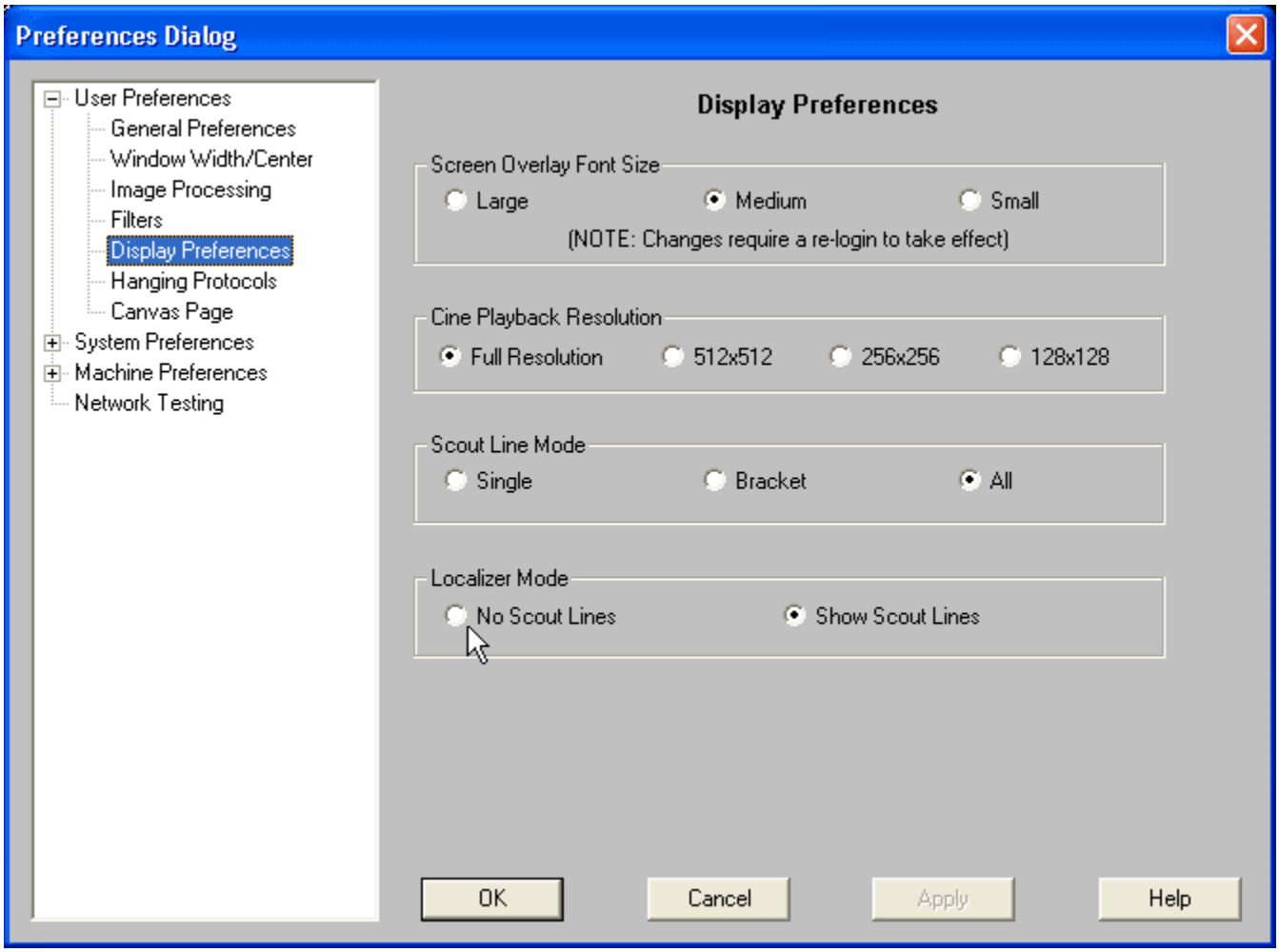
Above, clicking the left-mouse button produces scout lines and brings all series with the same DICOM frame of references to the same location...



By dragging the cursor, as seen above, all series move in synch. The benefit of using this feature instead of the Linking tool is that series with different orientations (Axial, Saggital and Coronal) can all aligned simultaneously.

Please note that the measurement tools and the localizer cannot be used at the same time. Selecting a measurement tool will disengage the Show Localizer feature.

By default, you will see scout lines appear when you click and drag. These scout lines can be removed in the Display Preferences section of the User Preferences, as seen below.



For more information on these preferences, please see the Preferences Chapter.

Warning: Using the localizer to navigate a multi-phase series

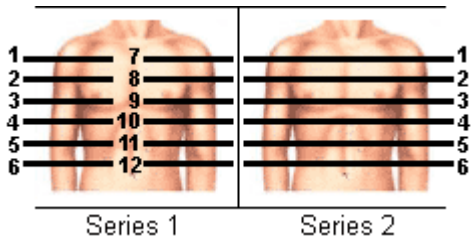
Multi-phase studies contain multiple images with the same location identifier. Paging through a multi-phase series that not has been split will typically result in jumping back to the first slice location each time the user reaches the end of each phase within the series.

If the localizer is used to navigate through a multi-phase series, you will notice that the other linked series are synchronized on location and basically display the image with closest location to the one displayed in the master series.

If the non multi-phase series is used as the master, iSite will try to find the image with the closest location in the multi-phase series, and because there are potentially multiple

matches, iSite will display the best match from the first phase. (In this example iSite would never display image 7 through 12.)

In other words, it is not possible to review all images of a multi-phase series by paging through another series while using the localizer functionality.



Hanging Protocols

Hanging protocols are an important part of an efficient reading workflow and iSite Radiology has been designed with this in mind. With regard to how exams are hung in your Diagnostic Monitors, iSite Radiology is equipped with a wide and flexible variety of options. Hanging Protocols can also be configured for Virtual-Split Monitors as if they were distinct physical Diagnostic Monitors.

Not only can monitor configurations be changed at the click of your mouse, iSite Radiology can be configured to recognize certain combinations of exam characteristics and hang the exam according to your specifications. iSite Radiology has been designed to save your personal hanging protocols so that they are there every time you use the program.

Hanging Protocols have a special relationship with Presentation States that affects how exams may be displayed. If the user opens an exam that has a Technologist or Pre-Read Presentation State, the Presentation State will override certain features of the Hanging Protocol for the exam. The Hanging Protocol settings Invert, Clones, and WW/WL will not be applied. If a Hanging Protocol is selected, edited or created for this type of exam, all of the Hanging Protocol features will be applied, regardless of any Presentation States.

If the exam has only a Original DICOM Presentation State or only a User Presentation State, then the Hanging Protocol will be applied when the exam is opened in the Canvas Page. If a Presentation State is selected, edited or created from this exam, the Presentation State will be applied regardless of any Hanging Protocol.

- User and System Hanging Protocols: iSite Radiology provides User and System Level Hanging Protocols. A User Hanging Protocol is created by an individual user and is available only to that user. For example, if you create a User Hanging Protocol called "MR Brain Special", that Hanging Protocol will only be available to you. System Hanging Protocols are created by your iSite System Administrator and are available to all users. User and System Hanging Protocols are created, edited and selected in the same way.

- Hanging Protocol Hierarchy: Hanging Protocols can be created at three different levels:

1. Modality (Generic Level)
2. Modality and Body Part (Specific Level)
3. Hanging Protocol Group (Exam Code Level, Very Specific)

In addition, as discussed in the previous section, Hanging Protocols can be created at a User or System Level.

iSite applies the highest ranking Hanging Protocol available for a given exam and always applies the User Hanging Protocol when available at the same level.

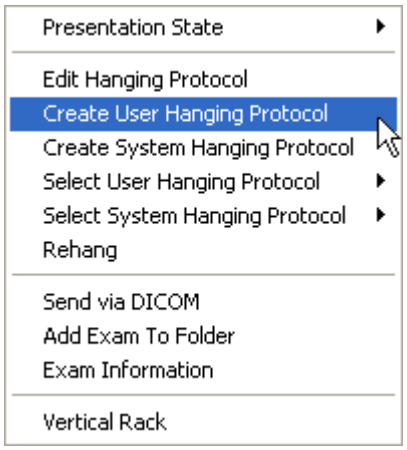
The following rank order is used:

1. User "Hanging Protocol Group" Hanging Protocol available for this exam
2. System "Hanging Protocol Group" Hanging Protocol available for this exam
3. User "Modality + Body Part" Hanging Protocol available for this exam
4. System "Modality + Body Part" Hanging Protocol available for this exam
5. User "Modality" Hanging Protocol available for this exam
6. System "Modality" Hanging Protocol available for this exam

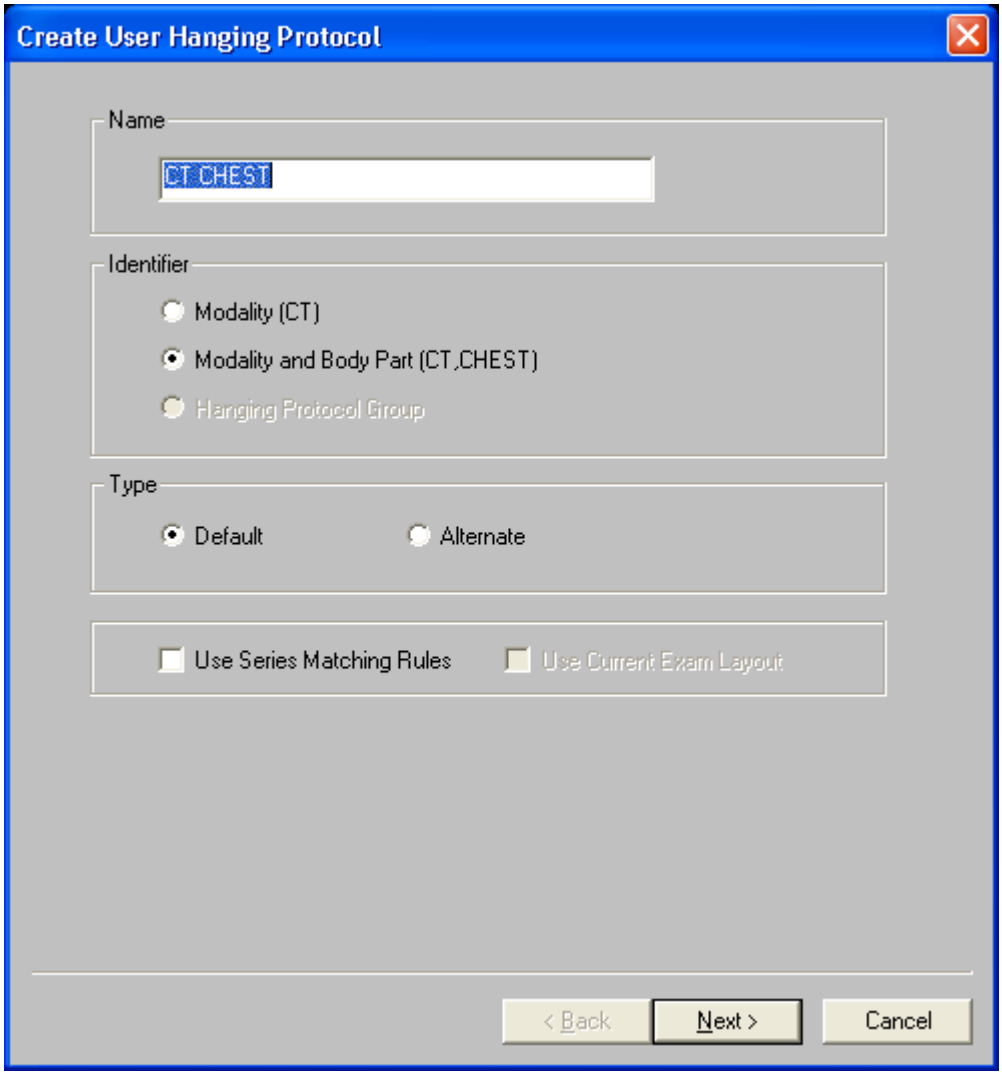
- Default vs. Alternate Hanging Protocols: iSite offers the ability to create multiple Hanging Protocols for the same Exam Type. This can be beneficial when you read a lot of the same Exam types that contain a lot of different series. For example, a Neuroradiologist that primarily reads MR HEAD exams might want to define a few alternate HPs that he or she can quickly switch to, rather than having to re-hang the entire study. Another use case is that Radiologists might want to define a few alternate Hanging Protocols at the "Modality" level that they can quickly select and apply if there is no matching Hanging Protocol available for that particular exam, or if the System Hanging Protocol applied differs from their personal preference.

Hanging Protocols come in two types, default and alternate. There can only be one default Hanging Protocol per combination. You can, however, create as many alternate Hanging Protocols as you desire. For example, you might create one default and three alternate Hanging Protocols for MR Brain exams. Hanging Protocols that are defined, as type "Alternate" are never automatically applied by the iSite system. However, they are available and can be selected and applied to an exam on the fly.

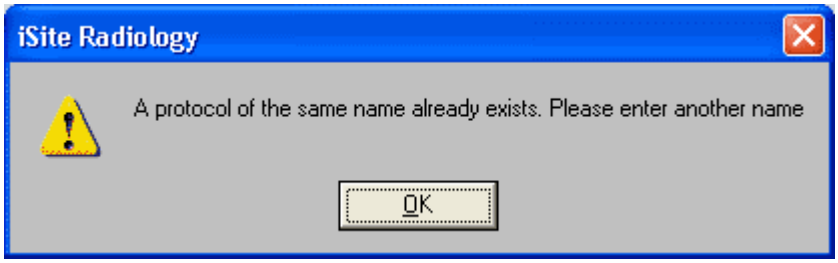
- Creating New Hanging Protocols: To create a new Hanging Protocol, right-click on the margin of the main exam's row and select the "Create User Hanging Protocol" option, as seen below:



You will be led through a series of dialogs designed to help you specify every detail of the Hanging Protocol. The first window will appear, as seen below.



Name: iSite Radiology will suggest a name for the Hanging Protocol based on the modality and body part (if available), in this case "MR BRAIN". You can edit this name for your convenience. If the name you choose is already in use, the following warning will be displayed.



Identifier: Once you have named the Hanging Protocol, choose the principal identifier of the Protocol. Choose "Modality" if you wish the Hanging Protocol to be applied to all exams of this modality (ex: MR) or "Modality and Body Part" to apply the HP to all exams of this modality and body part (ex: MR BRAIN). Finally, choose the type for this Hanging Protocol. Select "Default" if you want this exam to be applied as the default

for all "MR BRAIN" exams. Or, if you want this Hanging Protocol as a optional configuration that you can engage when needed, select the "Alternate" option.

Please note that the "Hanging Protocol Group" option will only be available if your iSite System Administrator has configured a Hanging Protocol Group for this identifier type (ie. CT, CHEST). Select the Hanging Protocol Group option if you want this Hanging Protocol to be applied to all Exams belonging to this Hanging Protocol Group.

Use Series Matching Rules: The "Use Series Matching Rules" checkbox concerns Matching Series Rules that have been set up by the iSite System Administrator. These Rules can be used to match specific series or images within a Hanging Protocol. Please note, only one Rule should be created for each type of series or image.

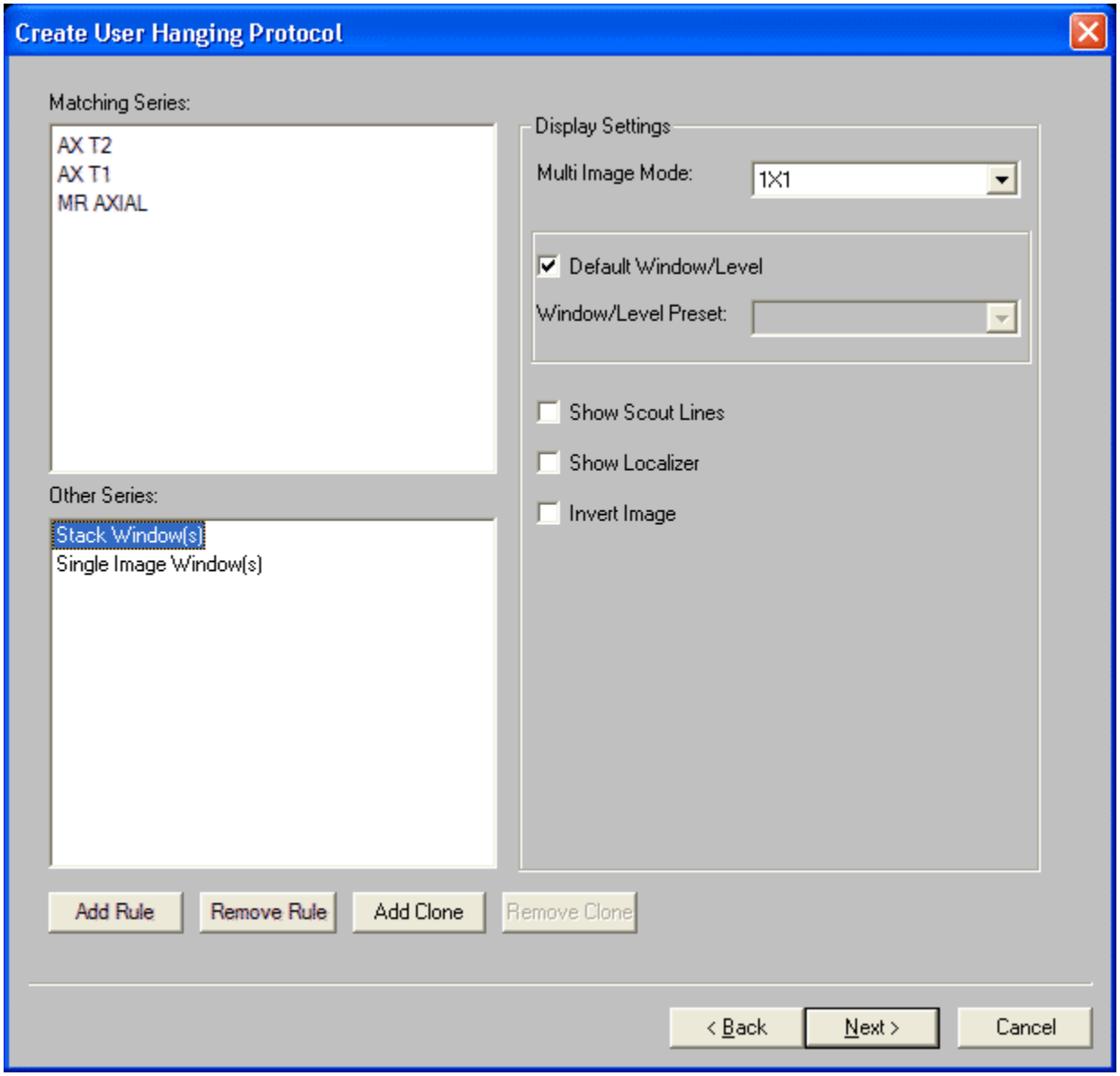
By default, series/images are sorted in the rack based on the DICOM Source system configuration settings (by acquisition time, alphabetically, etc). Sometimes, however, this default sort order does not fit the radiologist's needs. For example, a radiologist might always want CR PA Chests to be displayed as the first image in the Rack.

The technologist or radiologist could sort the series or images manually and create a Presentation State every time. However, if a user always wants a certain type of exam to be displayed a certain way, it is inefficient to repeatedly create Presentation States just for the purpose of sort order.

By creating a Hanging Protocol using Series Matching Rules, the relevant series/images can be sorted automatically without having to create Presentations States.

If you wish to use a Matching Series Rule to configure your new Hanging Protocol, check the "Use Series Matching Rules" checkbox. When the Matching Series Rule is selected, the "Use Current Exam Layout" checkbox is selected by default, allowing the Hanging Protocol to take into account features of the current exam layout (such as clones). These pertinent Matching Series Rules will be visible in the next step of the Hanging Protocol creation process. In this step, available Rules can be selected and Clones can be created using the buttons below the series window ("Add Rule", "Remove Rule", "Add Clone", "Remove Clone") and all display settings can be adjusted as well (Multi Image Modes, Default WW/WL, Show Scout Lines, Show Localizer, Invert Image, etc.).

When finished, click the "Next >" button. The following screen will appear.



In this window you will be able to adjust the display settings for image series (Stacked Images Windows) and plain film images (Single Image Windows). In addition you will be able to create clones. If you have checked the "Use Matching Series Rules" checkbox in the previous dialog, available Rules will be displayed in the "Matching Series" window, seen above.

To adjust the settings that will be applied to ALL Stacked Image Windows, click on the "Stacked Images Window(s)" listing in the Series window, and adjust the settings as appropriate.

To adjust the settings that will be applied to ALL Single Image Windows, click on the "Single Image Window(s)" listing in the Series window, and adjust the settings as appropriate.

The following options are available for Stacked Images Window(s):

- **Multi Image Mode:** This allows you to split an image window so that multiple slices can be displayed in a single image window.

- **Default Window/Level or Window/Level Preset:** If you wish for the default Window Width and Level value for the modality to be applied, check the Default Window Width/Level box. If the box is left unchecked, select a preset Window Width and Level value from the pull-down menu.

- **Show Scout Lines:** This option allows you to automatically show scout lines on MR series or CT Scout Images.

- **Show Localizer:** This option allows you to automatically engage the Localizer Tool.

- **Invert Image:** This option allows you to automatically invert the contrast and brightness of the images to which the Hanging Protocol is applied.

The following options are available for Single Image Window(s):

- **Default Window/Level or Window/Level Preset:** If you wish for the default Window Width and Level value for the modality to be applied, check the Default Window Width/Level box. If the box is left unchecked, select a preset Window Width and Level value from the pull-down menu.

- **Show Scout Lines:** This option allows you to automatically show scout lines on MR series or CT Scout Images.

- **Show Localizer:** This option allows you to automatically engage the Localizer Tool.

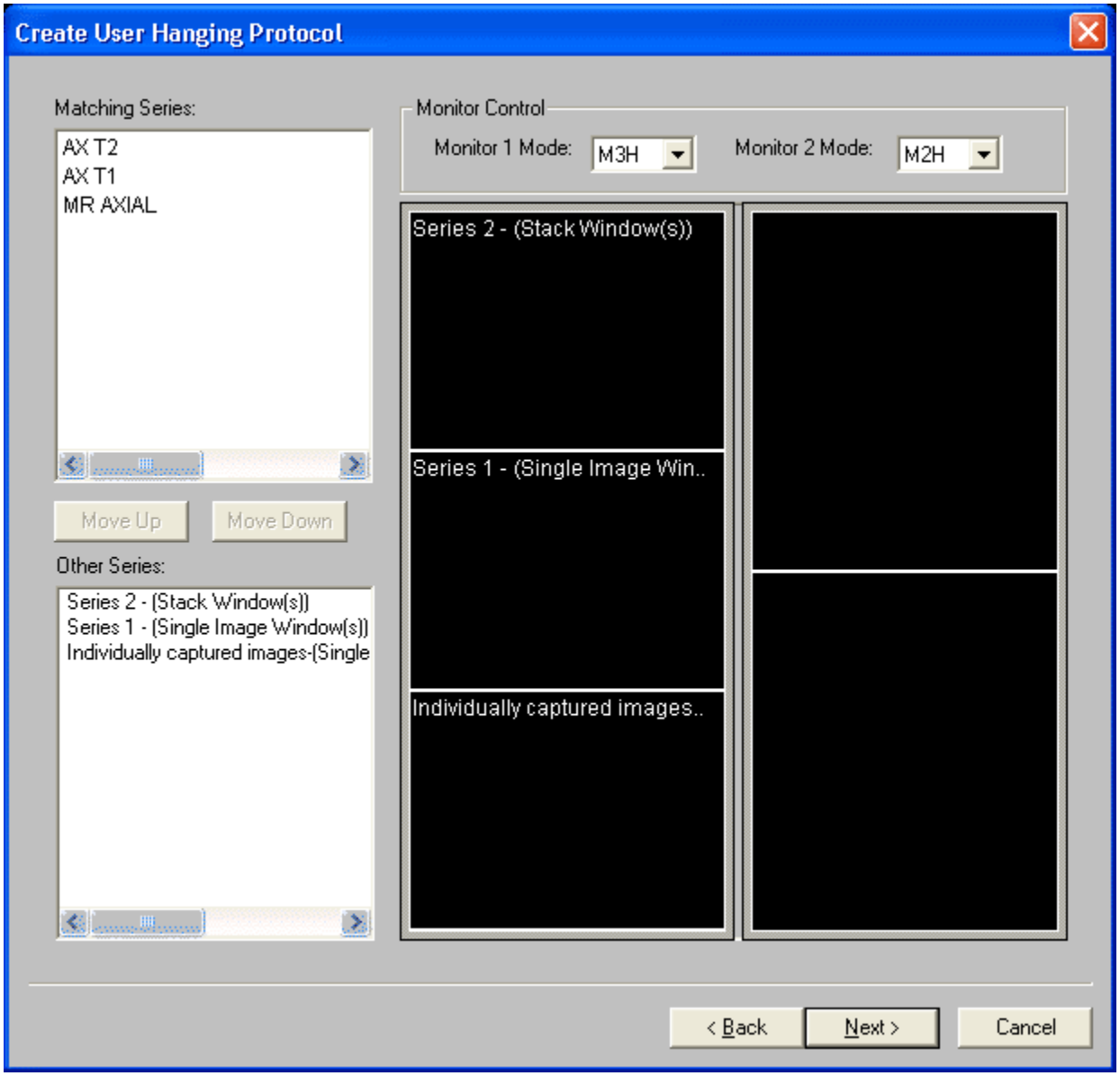
- **Invert Image:** This option allows you to automatically invert the contrast and brightness of the images to which the Hanging Protocol is applied.

iSite provides the ability to create clones automatically as part of a Hanging Protocol. Clones are basically copies of the images or series that can be used to provide alternative views.

For example: Clone all Single Image Windows and apply the “Invert Image” option to the clone(s), or Clone all Stacked Image Windows with a LUNG and BONE WW/WL preset.

Clones can be created by clicking on the “Stacked Image Windows” or “Single Image Windows” and selecting the <Add Clone> button.

When you have finished setting the desired options, click the "Next >" button. (You can always click the "< Back" button to return to a previous screen.) The following screen will appear.



In this window you will set how the exams of this type will display on your diagnostic monitors. For each monitor, set the Mode and the Starting Series. If you have checked the "Use Matching Series Rules" checkbox in the previous dialog, available Rules will be displayed in the "Matching Series" window, as seen above. As you change these settings the display will change to show you how your monitors will hang. The monitors provide additional information about where individual series will go.

iSite Radiology supports up to 4 monitors. However, if you have more than 2 diagnostic monitors, please note that Hanging Protocols are only used for the first two monitors. For details on Hanging Protocols monitor automatic loading, please see the 'Hanging Protocols and Monitor Configuration" section below.

Hanging of Relevant Prior Exams

□□iSite always loads ONE new Exam and ONE relevant prior Exam (if available).

□□New and Prior exams are hung based on the Hanging Protocol of that exam type (not on whether it is a new exam or a prior).

□□The general mechanism for the selection and hanging of a relevant prior is based on:

o The definition of a relevant prior for a given exam type.

o The applicable Hanging Protocol of the prior exam.

o The number of monitors available to display the prior exam.

Hanging Protocols and Monitor Configuration

Not all workstations have the same monitor configuration and users want to know what happens to a HP when logging into a system with a different monitor configuration. Hanging Protocols are optimized to work with ONE, TWO or FOUR diagnostic monitor displays.

iSite supports TWO monitor Hanging Protocols and provides a hotkey <F2> to toggle between what is visible and what might not be visible. The following examples are used to explain how this works:

First create a 2 Monitor Hanging Protocol:

Hanging Protocol Name: CR CHEST (one AP, one Lateral)

Monitor 1: General PA

Monitor 2: General LAT

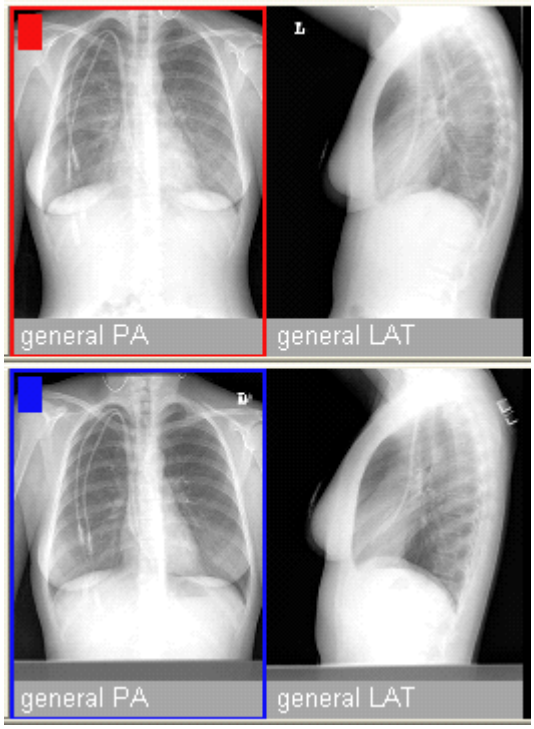
The following examples are used to explain how the Hanging Protocol will be applied based on the number of monitors available for an exam and whether or not there is a relevant prior available. The following table is used to explain how, using the hotkey, it is possible to switch between what is displayed and what is displayed on the second monitor in virtual memory.

Number of monitors	Relevant Prior Found?	Monitor 1	Monitor 2	Monitor 3	Monitor 4
1	No	New Exam General PA **>>** New Exam General LAT	N/A	N/A	N/A
1	Yes	New Exam General PA **>>** New Exam General LAT	N/A	N/A	N/A
2	No	New Exam General PA **>>** N/A	New Exam General LAT **>>** N/A	N/A	N/A
2	Yes	New Exam General PA **>>** New Exam General LAT	Prior Exam General PA **>>** Prior Exam General LAT	N/A	N/A
4	No	New Exam General PA **>>** N/A	New Exam General LAT **>>** N/A	Empty	Empty
4	Yes	New Exam General PA	New Exam General LAT	Prior Exam General PA	Prior Exam General LAT

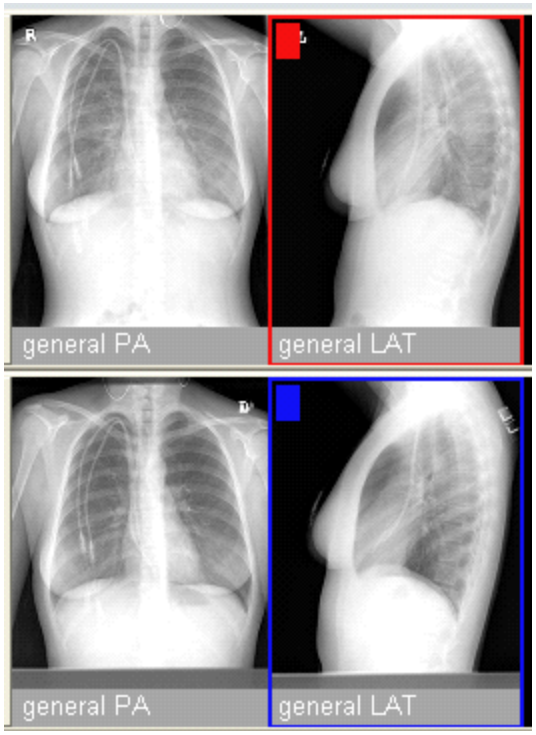
		>> N/A	>> N/A	>> N/A	>> N/A

Example:

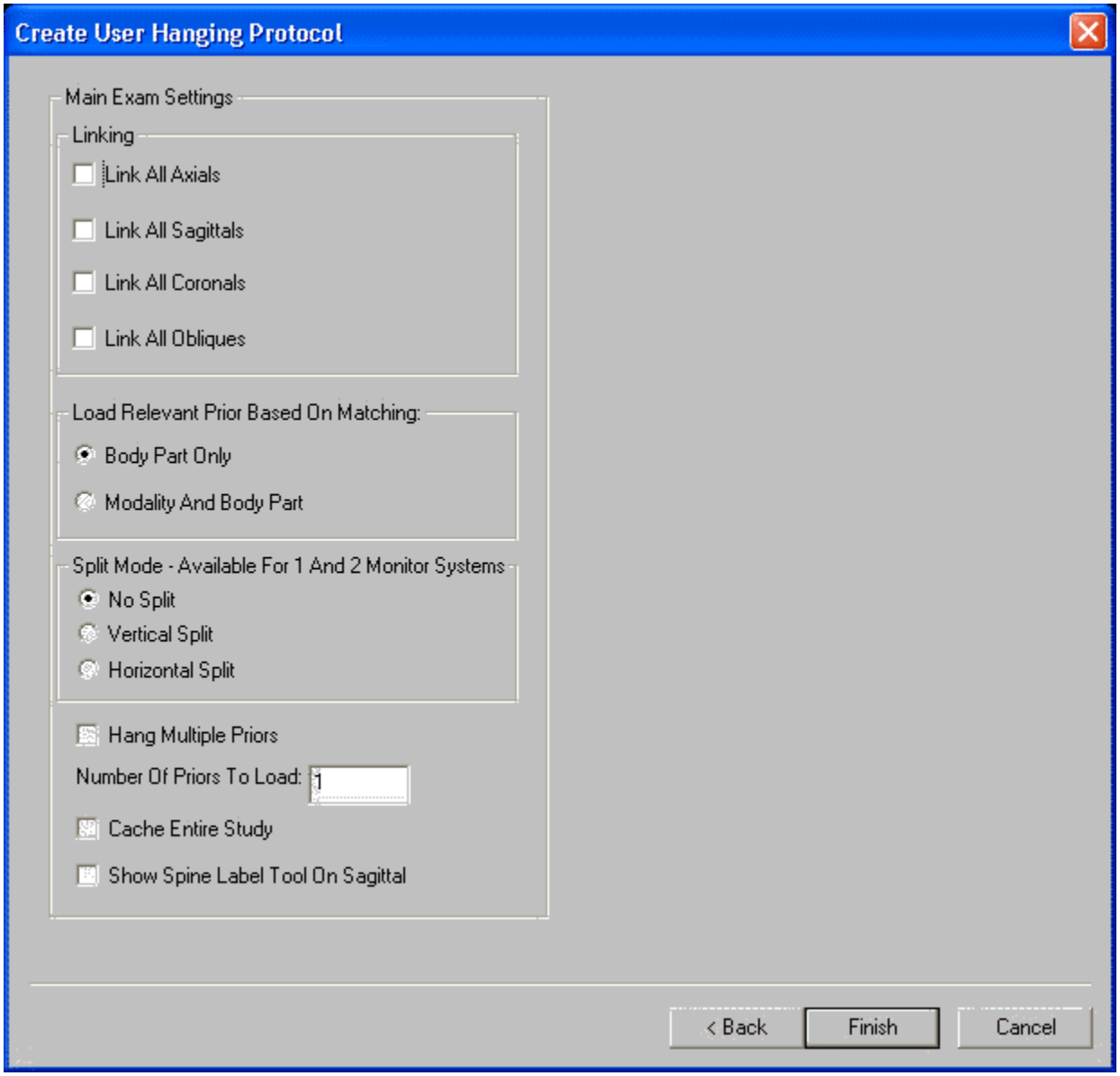
Two-monitor system with a relevant prior found.



Pressing <F2> will move the rectangles to the virtual monitors:



Of course, if you wish to display images or series on your additional monitors you can manually place the image there. When you have finished configuring the monitor displays, click the "Next >" button. The following screen will appear.



Set the Linking options as desired. You can link all axial, sagittal, coronal or oblique views of an exam. Please note that linking parameters will only be applied to the main exam.

If you wish to load relevant priors based on body part only, or both modality and body part, set that option as necessary. Relevant priors are prior exams which pertain to the current exam being viewed. The definition of "Relevant" is set on a site-by-site basis by the iSite System Administrator. Most often this definition is based on modality and body part criteria.

In the Split Mode area, specify whether you would like the Hanging Protocol to display in Virtual-Split Monitors by selecting the option that best applies. As indicated in the dialog, the Split Monitor feature is only available for systems with 1 or 2 monitors.

If you would like the Hanging Protocol to display multiple priors, check the "Hang Multiple Priors" box and specify how many priors should be loaded. The table below shows how these priors will be distributed between physical Diagnostic Monitors and Virtual-Split Monitors.

# of Virtual Monitors	# of Priors Loaded	Description
1	N/A	Recticule hung on main exam
2	0	Both Recticules hung on main exam
2	1+	Recticule 1 on main exam, recticule 2 on prior
4	0	Recticule 1 on main Recticule 2 on main Recticule 3 not hung Recticule 4 not hung
4	1	Recticule 1 on main Recticule 2 on main Recticule 3 hung on prior Recticule 4 hung on prior
4	2+	Recticule 1 on main Recticule 2 on main Recticule 3 hung on prior 1 Recticule 4 hung on prior 2

If you wish to cache the entire study on your local machine, check the "Cache Entire Study" option.

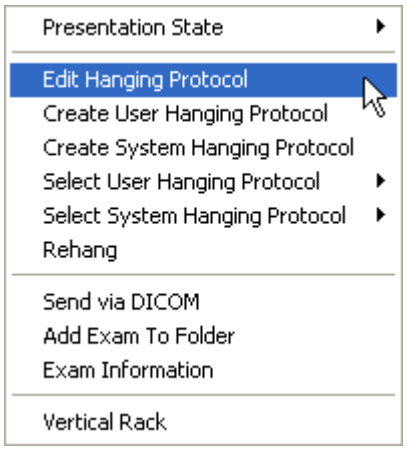
Specify if you wish the spinal labeling tool to automatically display for all sagittal views as well as the number of priors to load with this type of exam. The Spinal Labeling Tool is used for placing specialized spinal annotations on images of the vertebra.

If you wish to review your settings, click the "< Back" button and make changes as necessary. If you are satisfied with your settings, click the "Finish" button.

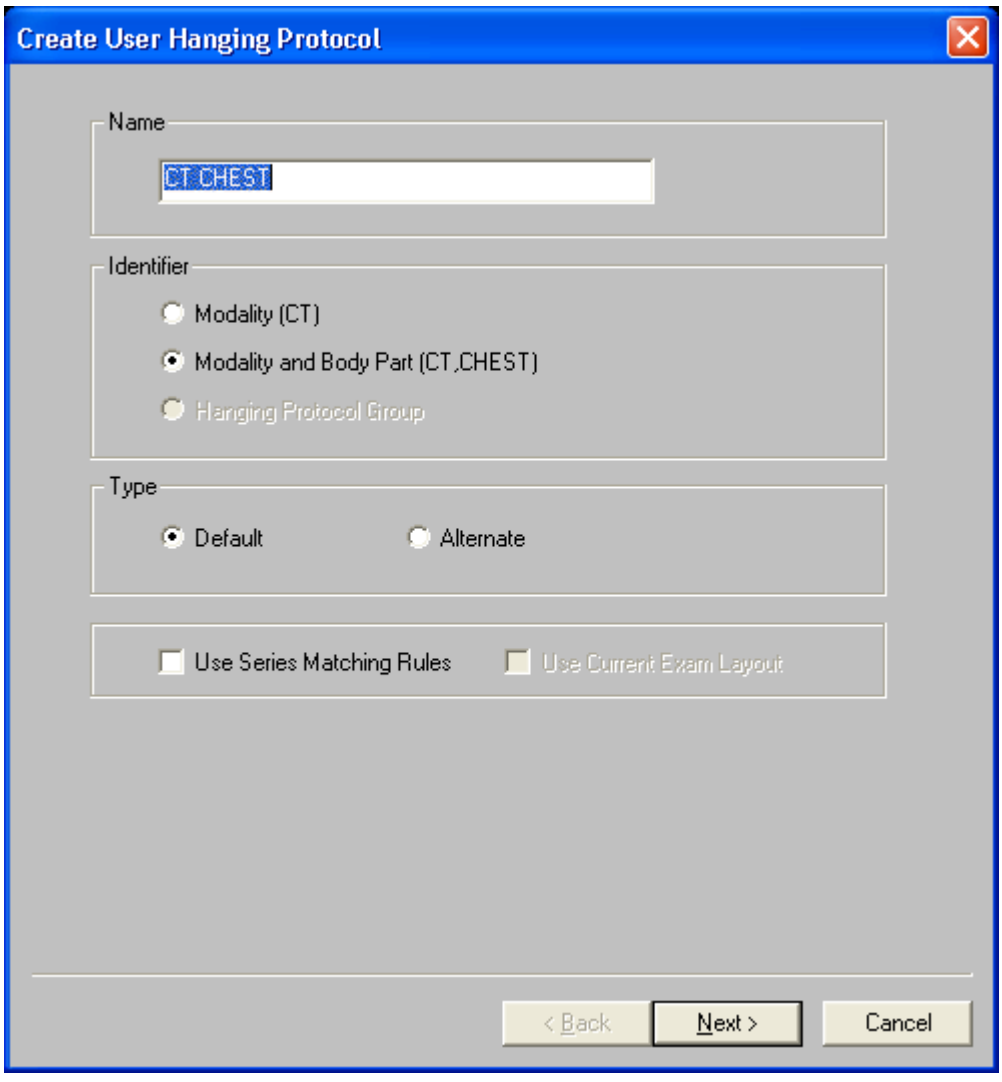
The main exam you have been working on will automatically be rehung based on the settings of the hanging protocol and this hanging protocol will now be visible along with your other "User Hanging Protocols."

Editing Hanging Protocols

To edit an existing Hanging Protocol, right-click the exam row margin and select the "Edit Hanging Protocol" option from the pop-up menu, as seen below.



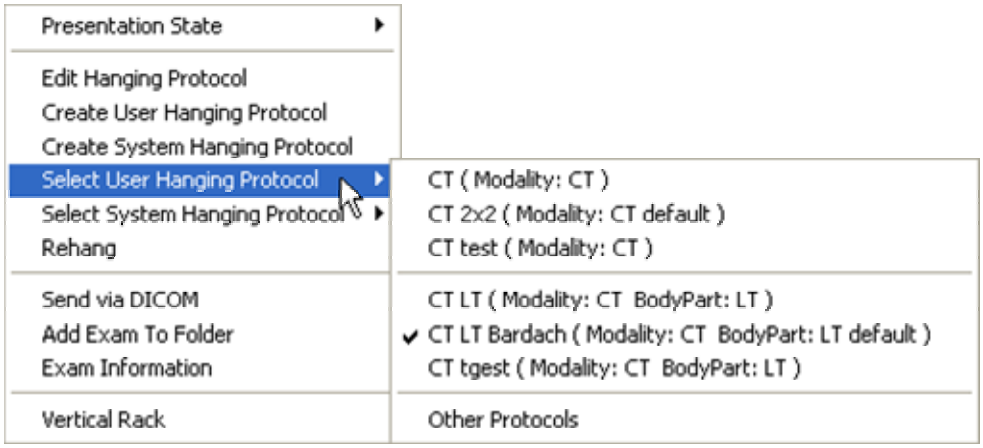
The first window of the Hanging Protocol settings will appear, as seen below.



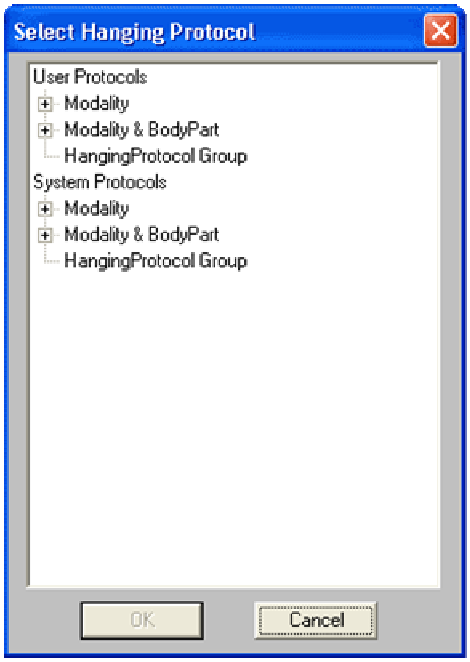
Change the settings of the Hanging Protocol as desired, following the steps listed in the section above. When you are finished, click the "Finish" button and your changes will be saved. Please note that after a hanging protocol is edited, it must be reapplied to update changes to the exams being viewed. If the exam being viewed is the main exam, all exams must be reloaded and all changes will be lost.

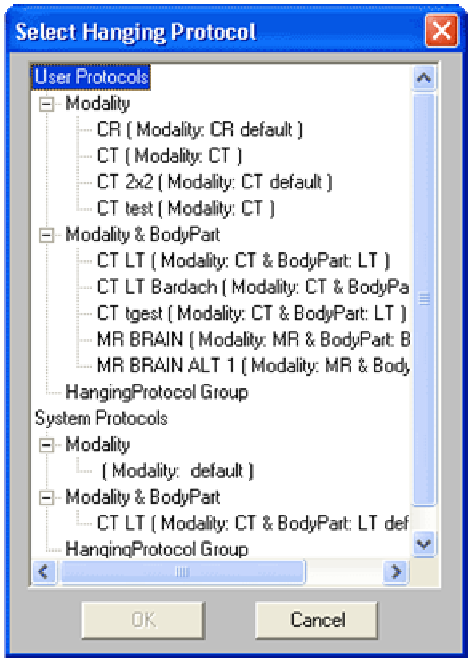
Selecting Hanging Protocols

To apply a Hanging Protocol to your main exam, right-click the exam row margin and choose "Select User Hanging Protocol" or "Select System Hanging Protocol" from the menu, as seen below.


Presentation State
Edit Hanging Protocol
Create User Hanging Protocol
Create System Hanging Protocol
Select User Hanging Protocol
Select System Hanging Protocol
Rehang
Send via DICOM
Add Exam To Folder
Exam Information
Vertical Rack
CT (Modality: CT)
CT 2x2 (Modality: CT default)
CT test (Modality: CT)
CT LT (Modality: CT BodyPart: LT)
CT LT Bardach (Modality: CT BodyPart: LT default)
CT tgest (Modality: CT BodyPart: LT)
Other Protocols

If you choose "Select User Hanging Protocol" all of the User Hanging Protocols available for the modality of the current exam will be displayed. The top portion of the sub-menu shows the Modality based Hanging Protocols. The middle portion shows the Hanging Protocols based on Modality and Body Part. If you wish to see Hanging Protocols for other modalities, choose the "Other Protocols" option. The following window will appear, as seen at bottom left.




Select Hanging Protocol
User Protocols
Modality
CR (Modality: CR default)
CT (Modality: CT)
CT 2x2 (Modality: CT default)
CT test (Modality: CT)
Modality & BodyPart
CT LT (Modality: CT & BodyPart: LT)
CT LT Bardach (Modality: CT & BodyPa
CT tgest (Modality: CT & BodyPart: LT)
MR BRAIN (Modality: MR & BodyPart: B
MR BRAIN ALT 1 (Modality: MR & Body
HangingProtocol Group
System Protocols
Modality
(Modality: default)
Modality & BodyPart
CT LT (Modality: CT & BodyPart: LT def
HangingProtocol Group
OK
Cancel

To browse the available Hanging Protocols, expand the directory tree, as seen in the image at right. Double-click the desired Hanging Protocol and the exam you are viewing will be rehung accordingly.

The same steps can be followed when you choose the "Select System Hanging Protocol" option from the pop-up menu.

Rehang

If you have made changes to your currently applied Hanging Protocol and wish to revert the Hanging Protocol's original presentation, click 'Rehang'

Deleting Images

Authorized users can remove images from the iSite system by clicking the corresponding images in the Exam Racks. Images may need to be to be deleted for any number of reasons, some of which are listed below:

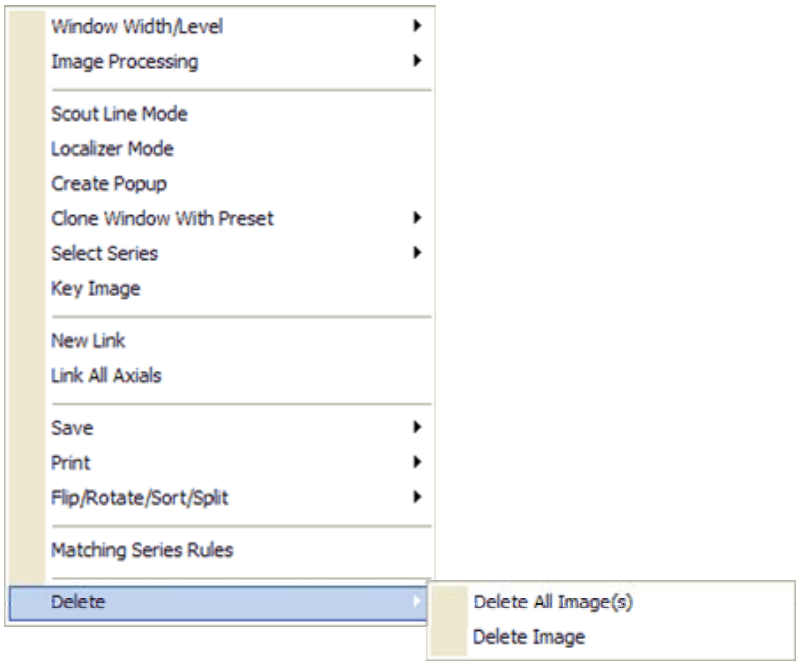
1) Technologists sometimes send image(s) to iSite accidentally using the wrong patient or exam demographics or with a SUID that was already in use. In those cases where the SUID is already in use, the new images are automatically merged with an existing study. These duplicate images should be removed.

2) Sometimes an image, series or part of a series needs to be rescanned due to imaging or patient problems such as mechanical problems, overexposure, underexposure, patient movement, or incorrect patient position, etc.

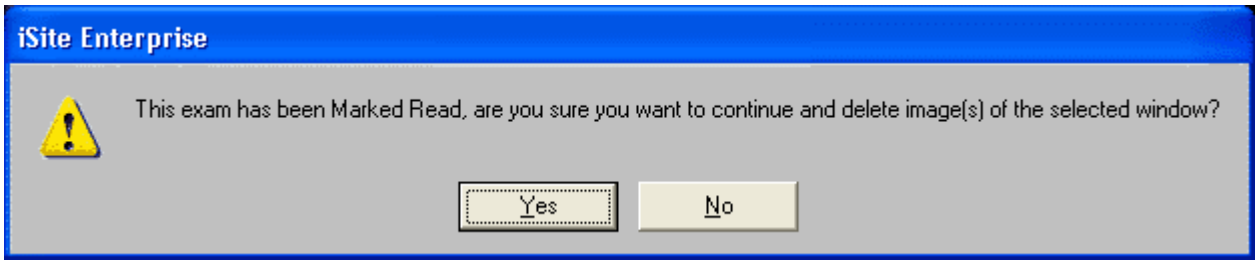
3) Sometimes test images are created at the beginning of a procedure and accidentally end up in iSite.

Warning: Once images have been deleted, they can be recovered. However, all presentation states, measurements and annotations will be lost.

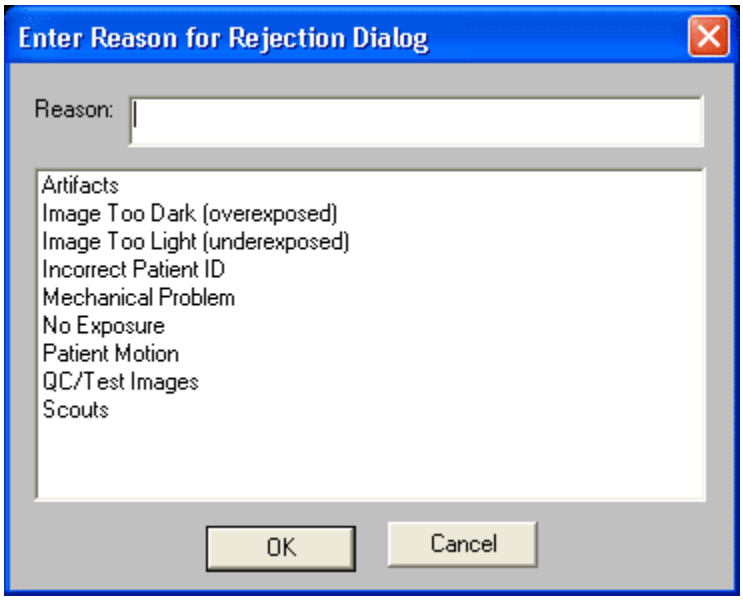
The two deletion options allow users with the correct permissions to delete images from exams, as seen below.



The option "Delete All Image(s)" removes every image from a selected series, whereas the option "Delete Image" only removes the current image. If the exam being viewed has already been marked "Read", a confirmation dialog will appear, as seen below:


iSite Enterprise
This exam has been Marked Read, are you sure you want to continue and delete image(s) of the selected window?
Yes
No

If you answer "Yes", or if the exam has not yet been marked "Read", a "Reason for Rejection" dialog will appear, as seen below:



Either enter in a reason in the dialog or select one of the pre-canned reasons, then click "OK". The image or images will be deleted.

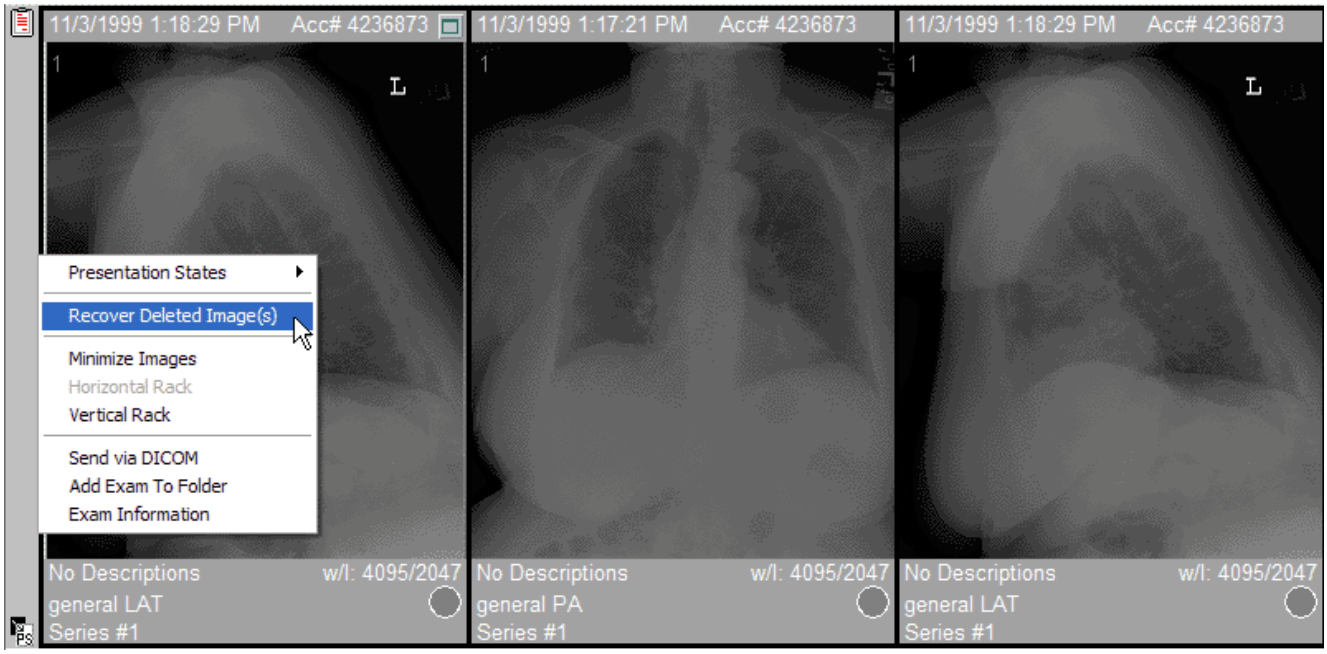
When an image is deleted, iSite keeps a record of the following information:

- iSite User ID
- Deletion Date
- Deletion Time
- Modality
- Accession #
- MRN
- Series/Image UID
- Series/Image Description/Number
- Reason for Deletion

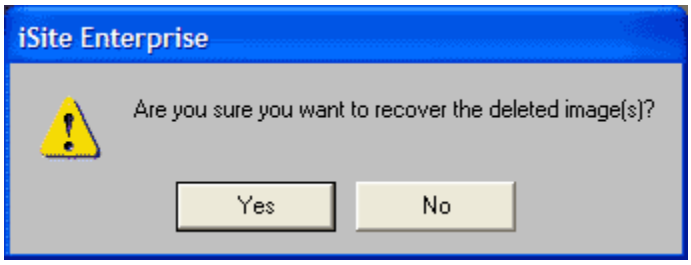
These audits can be viewed by the iSite System Administrator in the Statistics page.

Recovering Deleted Images

Deleted images can be recovered however, as mentioned above, all presentation states, measurements and/or annotations will be lost. To recover deleted images, right-click the Exam Row Margin of the exam from which images were deleted and select "Recover Deleted Image(s)", as seen in the image below.



You will be asked to confirm the recovery, as seen below:



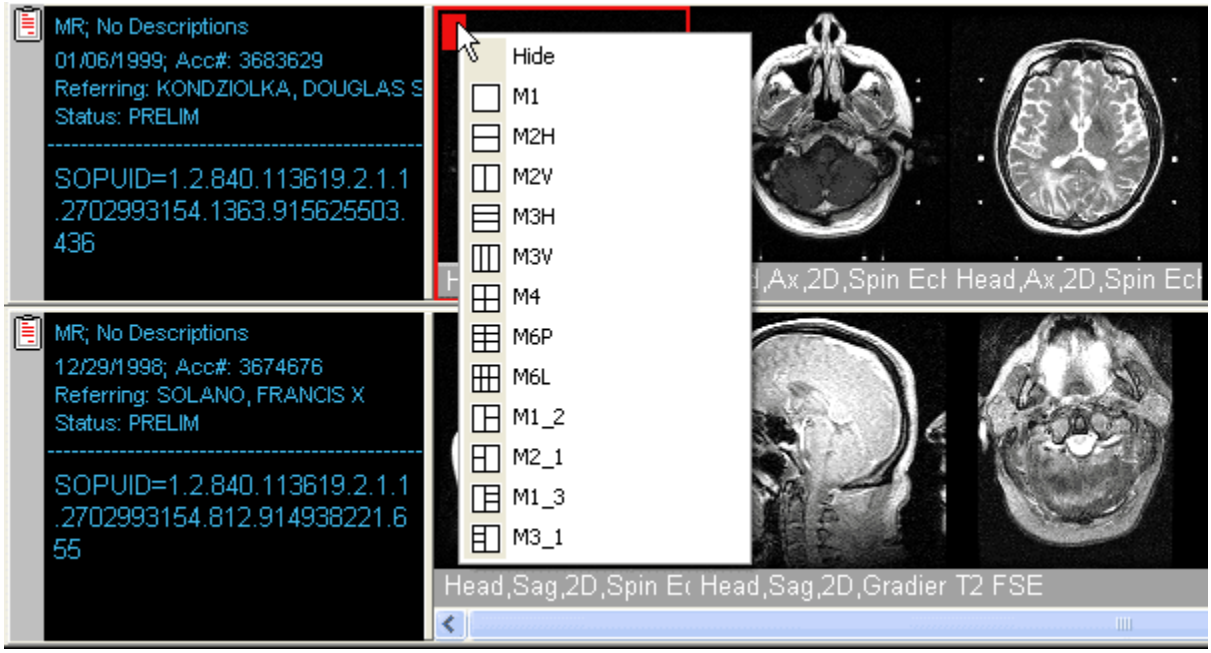
Upon clicking the "Yes" button, iSite will confirm the recovery with the following dialog.

iSite Enterprise
Image(s) have been successfully recovered. Please close and reopen the exam to view the recovered image(s).
OK

Click "OK" and then reload the exam to view the recovered images.

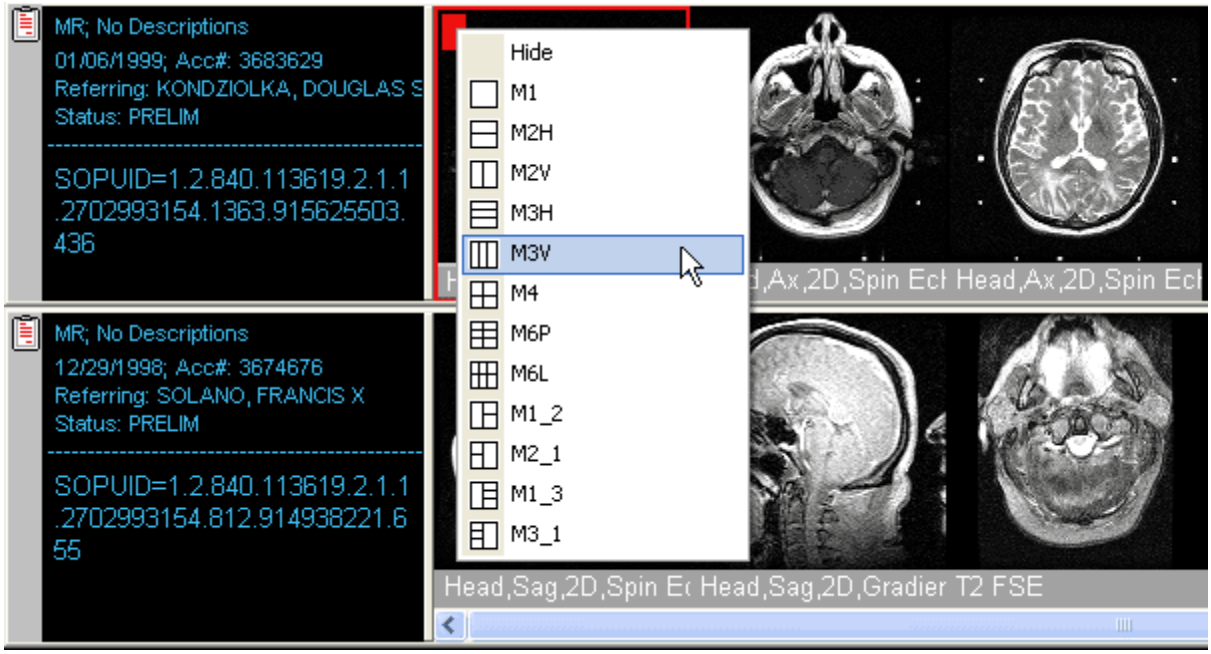
Configuring your Diagnostic Monitors

By default, the hanging configuration of your Diagnostic Monitors is based on the global settings in your Hanging Protocol preferences. There are several ways to quickly change the configuration of your Diagnostic Monitors. You can simply right-click the corresponding monitor icon in the center of the Navigation Timelines. Another method is to right-click an image or series within a Navigation Rectangle, and select the Monitor Layout option from the resulting pop-up menu. In both cases, a menu will appear displaying the available configuration options, as seen below.

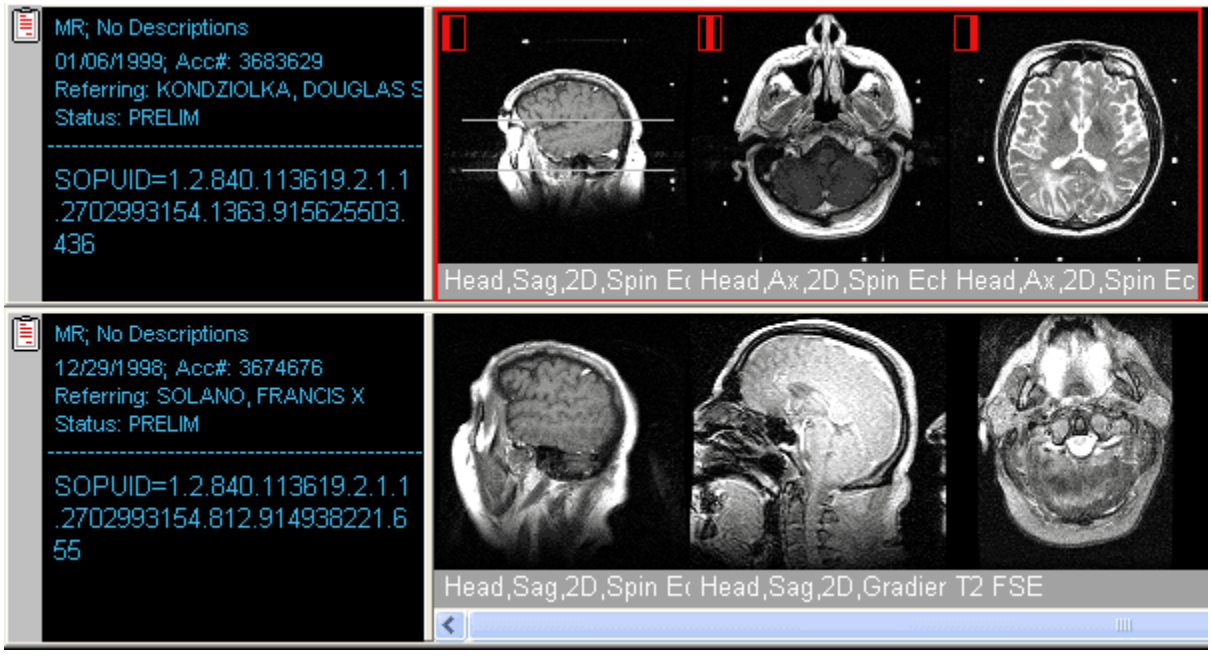


Click the desired option and your monitor will be reconfigured.

Depending on how you change the monitor layout, the size of the Navigation Rectangles may change when you change the configuration of your diagnostic monitors. For example, if your monitor is set to the M1 setting and you change it to an M3V setting, the Navigation Rectangles will change from containing one image or series to containing three, as seen below.



Choosing the M3V-sized Navigation Rectangle from a one-on-one(M1) layout



The same series after the monitor layout was changed to M3V

Reading from the Diagnostic Monitors

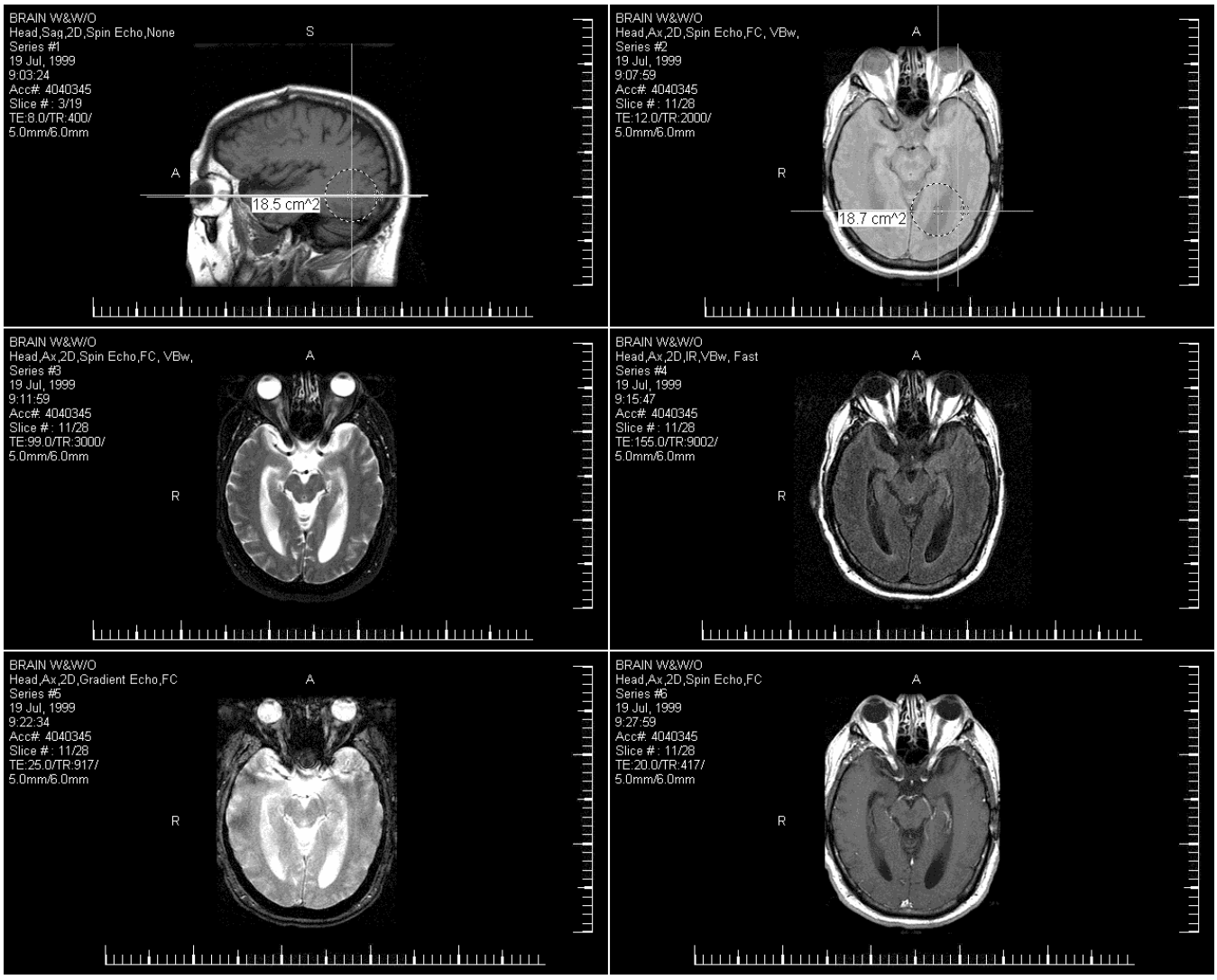
The iSite Radiology Diagnostic Monitors are used for the diagnostic reading of images in iSite Radiology. The hanging configuration of these monitors can be established at the click of a button or through customized Hanging Protocols. Other settings, such as the placement of metadata, image sorting and series tiling, are easily configured through the Preferences dialog, which can be accessed by clicking the Preferences Button in the iSite Radiology Control Strip.

The selection of the images displayed on the Diagnostic Monitors takes place in the Canvas Page, located below the monitors. These images can be annotated, labeled and measured. Interactive, navigational scouts can be employed to link series together and simultaneously navigate to a particular anatomical location. Also, numerous advanced image and series manipulation tools are available by right-clicking any image or series.

Warning: Lossy compressed mammographic images and digitized film screen images must not be reviewed for primary image interpretations. Mammographic images may only be interpreted using an FDA approved monitor that offers at least 5 Megapixel resolution and meets other technical specifications reviewed and accepted by FDA.

As shown below, the Diagnostic Monitors display full-resolution, full-fidelity radiological images and series accompanied by a variety of overlays which can be configured by the system administrator on a site-to-site basis. Please note that 6000 DICOM overlays can be toggled on and off by pressing the "F6" key. Hitting "Ctrl + F6" will toggle ALL overlays on and off.

The scaled rules that accompany the overlays are an ever-present element whose size will adjust accordingly at every resolution. Each tick on the scale represents 1cm with each 5cm mark called out. The scales can be dragged to examine various portions of an image. When the mouse is released, the scales will snap back into place.



iSite Radiology Virtual-Split Monitors

To maximize the total display space available for reviewing diagnostic images, particularly in situations where the radiologist needs to review a large amount of prior exams, iSite Radiology allows you to "split" your Diagnostic Monitors in half, thereby creating 2 "virtual-split" monitors from a single physical monitor. A single monitor system can be split and represented to the system as 2 Virtual-Split Monitors; a 2 monitor system can be split and represented to the system as 4 Virtual-Split Monitors.

To split a Diagnostic Monitor, place your cursor on its screen and right-click. From the resulting pop-up menu, select either "Split Horizontal" or "Split Vertical" according to how you wish to divide the Diagnostic Monitor's real-estate. The Virtual-Split Monitors will be separated by a noticeable partition.

To remove the split, right-click the screen and select "Cancel Split" from the pop-up menu.

Please note that, while the Diagnostic Monitor has been split, when you double-click an image or series loaded into one of the Virtual-Split Monitors, the full real-estate of the physical Diagnostic Monitor will be used to display the image or series, regardless of the Virtual-Split partition.

The Diagnostic Monitor Icons in the Canvas Page will be updated to reflect the split; a new Diagnostic Monitor Icon will appear alongside the existing ones and will behave just like other Diagnostic Monitor Icons. And, just like physical Diagnostic Monitors, the Virtual-Split Monitors can be incorporated into your Hanging Protocols.

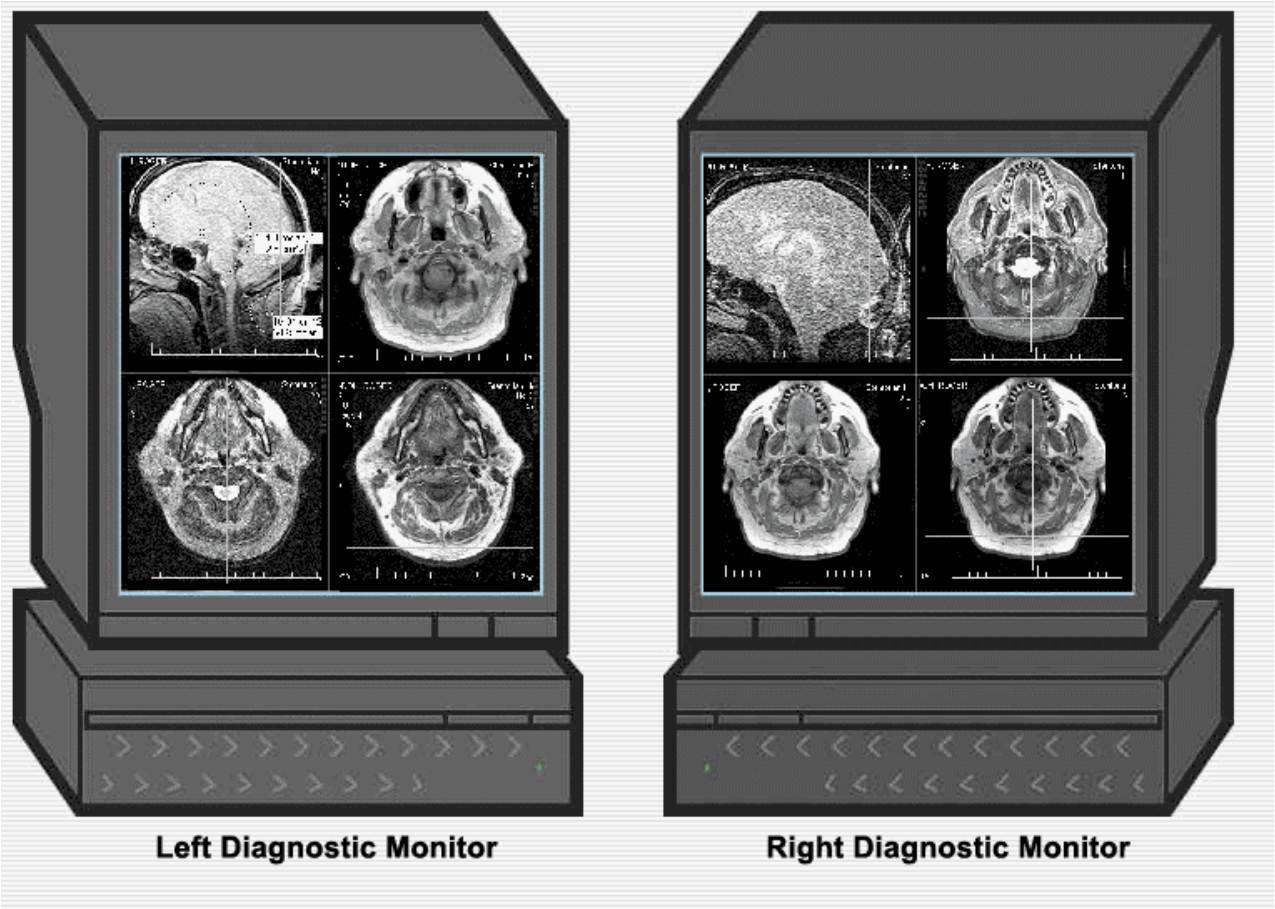
Selecting Images and Series to Hang

iSite Radiology has been designed to be configurable in such a way as to create as little hanging work as possible. If you have carefully set up your general preferences and your hanging protocols, in most cases you will not have to actively select images or series to hang. Ideally, you will simply click the "Next Exam" button ( ) on the canvas page and proceed through your personalized worklist. If you do have to hang images or series, iSite Radiology makes the process quick and intuitive.

The *ad hoc* selection of images and series for display in your Diagnostic Monitors takes place in the Canvas Page, located in the Navigational Console, the monitor that sits adjacent to your Diagnostic Monitors.

The two different colored Navigation Rectangles indicate which exams are displayed in your Diagnostic Monitors. The colors used correspond to the two monitor icons, located in the upper right-hand corner of the iSite Radiology Control Strip.

As shown above, the red Rectangle indicates that the six enclosed series from the MR exam in the first exam row (accession number 4198732) are being displayed in the left Diagnostic Monitor, represented by the red Monitor Icon. The blue Rectangle indicates that the four enclosed series from the MR exam in the second exam row (accession number 4092897) are being displayed in the right Diagnostic Monitor, represented by the blue Monitor Icon. The Diagnostic Monitor Pane Icons, seen in the upper left-hand corner of each series thumbnail, show where in the Diagnostic Monitor that series is being displayed. These Icons can be toggled on and off by clicking Control-key + "P". The resulting displays are graphically illustrated below.



The Rectangles can be used in two different ways to load images, series or exams into your Diagnostic Monitors. The first method is to drag images and series into the Rectangle. The second method is to drag the Rectangle itself to other images, series or exams. Both of these techniques are discussed in detail in the iSite Radiology Canvas Page section of this manual.

Working with Images in the Diagnostic Monitors

iSite Radiology provides numerous tools for you to use while you interrogate diagnostic images and series in your Diagnostic Monitors. Among these are zoom, pan, window width and level control, cine and fast cine for series, invert, flip and rotate, as well as a host of advanced image manipulation tools such as image annotation, image measurement and spinal labeling. All of these tools, discussed at length below, are immediately accessible by right-clicking your mouse.

The most frequently used image manipulation features in iSite Radiology, window width and level adjustment, zooming, panning, cine and fast cine are all available directly from your mouse, without having to select an option from a menu. These features are described below:

- **Window Width and Window Level:** You can adjust the window width and window level in an image for optimal viewing or to highlight certain details for better visibility. Click the left mouse button and drag the cursor horizontally across the image to increase or decrease the Window Width. Click the left mouse button and drag the cursor vertically across the image to increase or decrease the Window Level. Please note that when you adjust the window width and level for a series, all slices in that series are affected. If you want to adjust the window width and level or one slice in a series, hold down the "L" Key while making the adjustment. In addition, preset Window Width and Window Level values can be created for any modality. These can be chosen from the right-click pop-up menu, as seen below.

  iSite also provides VOI LUT (Value of Interest LUT) access by right-clicking the desired image and selecting "VOI LUT Options" from the pop-up menu. iSite allows you to adjust WW/WL when VOI LUT options are activated. However, iSite's WW/WL options in the pop-up menu will be disabled.

- **Zooming and Panning:** You can zoom in and out of the image or series, and can pan around zoomed images, viewing detailed portions in smaller windows. To zoom into or out of plain film images, scroll the mouse-wheel. To pan, hold down the mouse-wheel and drag the mouse. To zoom into a CT or MR series, hold down the "Alt" key and click the left mouse button simultaneously, then drag the mouse towards you to zoom in or away from you to zoom out. To pan around CT or MR series, hold down the "Shift" key and click the left mouse button simultaneously, then drag your mouse. Please note, the degree to which you can zoom into an image or series depends on the modality type and the native resolution.
- **Viewing Slices in Image Series:** Multi-slice series from MR, CT, XA, US or other multi-slice modalities can be cined and looped. You can scroll through the slices in a series either one-by-one (Cine mode) or rapidly (Fast Cine). For a frame-by-frame review, slowly scroll the mouse-wheel. For rapid review, hold down the mouse-wheel and drag the mouse forward or backward.

  Fast Cine mode be activated by double-clicking the mouse wheel button. This will automatically engage a single Cine Loop feature, which continuously plays through all the slices in an image series from one end of the series to the other.

  Moving the mouse forward will play the cine loop in ascending order, while moving the mouse backward plays the loop in descending order. The Cine Loop will begin at a rate of 1 frame per second and will accelerate or decelerate depending on how far the mouse is moved forward or backward after the

mouse-wheel is clicked. The default playback rate of the Cine Loop, between 1 and 45 frames per second, is often sent from the modality as a DICOM tag. A default speed for when this information is not sent can be set in the iSite Preferences. To change the playback rate for a specific series on the fly (without changing the iSite Preferences), click the " + " or " - " buttons. Each click of those buttons will raise or lower the playback rate 1 frame per second.

The Play Cine Loop feature can also be engaged by right-clicking a series and selecting Play Cine Loop from the pop-up menu.

Expanded Image Overlay Information

If iSite Radiology is configured to display the information with overlays, all expanded image windows have text overlay with the following default fields: Lossy Compression Indicator, Current FPS (frames per second, multi-slice series only), Desired FPS (multi-slice series only), Zoom Factor, Key Image Indicator and Link Indicator.

The F6 hot-key is used to toggle overlays on and off in the following manners:

F6 : Toggles on/off Screen Overlays
Ctrl+F6: Toggles on/off ALL Overlays
Ctrl+Alt+F6: Toggles DICOM 6000 Overlays on/off

By default iSite will display embedded and declared DICOM overlays on top of images when the full resolution of the image is available. All other overlay content is set by your iSite System Administrator. A complete list of screen overlay information options is seen below:

- **Patient:** Name, MRN, Birth Date, Sex, Age.
- **Exam:** Accession, Referring Physician Name, Procedure Code, Procedure Description.
- **Study:** Date, Time, Description.
- **Series:** Modality, Description, Body Part, Series Number, Institution Name, Patient Position.
- **Images:** Image Type, Acquisition Date, Acquisition Time, Instance Number, Images in Acquisition, Acquisition Number, Spacing Between Slices, Slice Thickness, Slice Location.
- **CT:** KVP, Scan Options, Exposure Time, X-ray Tube Current, Gantry/Detector Tilt, Generator Power.
- **MR:** Scanning Sequence, Sequence Variant, Scan Options, Repetition Time, Echo Time, Echo Train Length.

- **Calculated:** Window Width, Window Level, Number of Images in Window, Page Number (Printing), Total Pages (Printing), Image Number (in Window), Link Status, Key Image, Zoom Factor, Positioner Primary Angle, Positioner Secondary Angle, Current Frame Rate, Desired Frame Rate, Number of Bits.

iSite Radiology Diagnostic Monitor Pop-up Menus

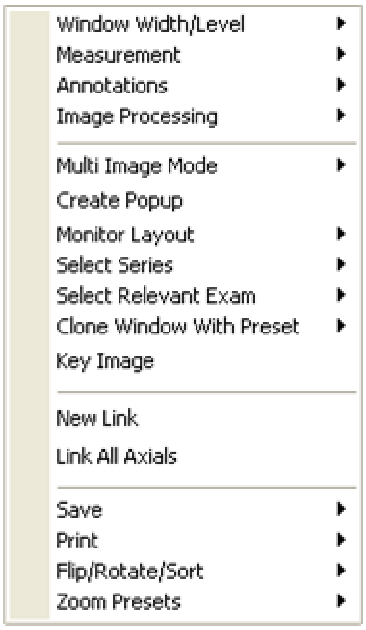
The remainder of iSite Radiology's image manipulation tools are available from pop-up menus that are displayed when you right-click an image or series in the Diagnostic Monitors. Please note, while they fulfill the same function as the pop-up menus seen in the Canvas Page, the pop-up menus displayed in the Diagnostic Monitors are more robust, including more options and tools.

Right-clicking an image or series in the Diagnostic Monitors will produce a context-sensitive pop-up menu displaying the various tools available for the modality in question. Each menu is modality-specific and certain features are only available with certain modalities.

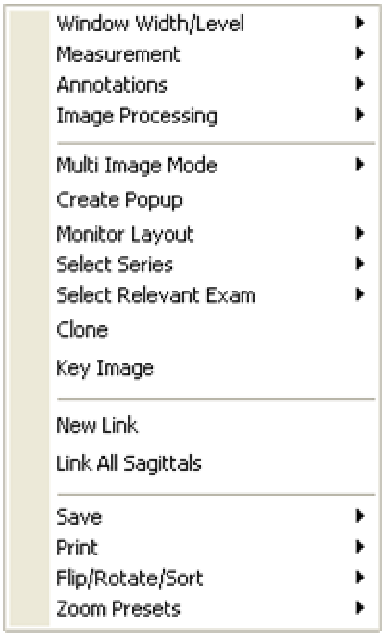
The font-size used in the pop-up menus can be changed in the General Machine Preferences to accommodate monitors of different resolution.

Three different pop-up menus are available in the Diagnostic Monitors, shown below:

CR Pop-up Menu



CT Pop-up Menu



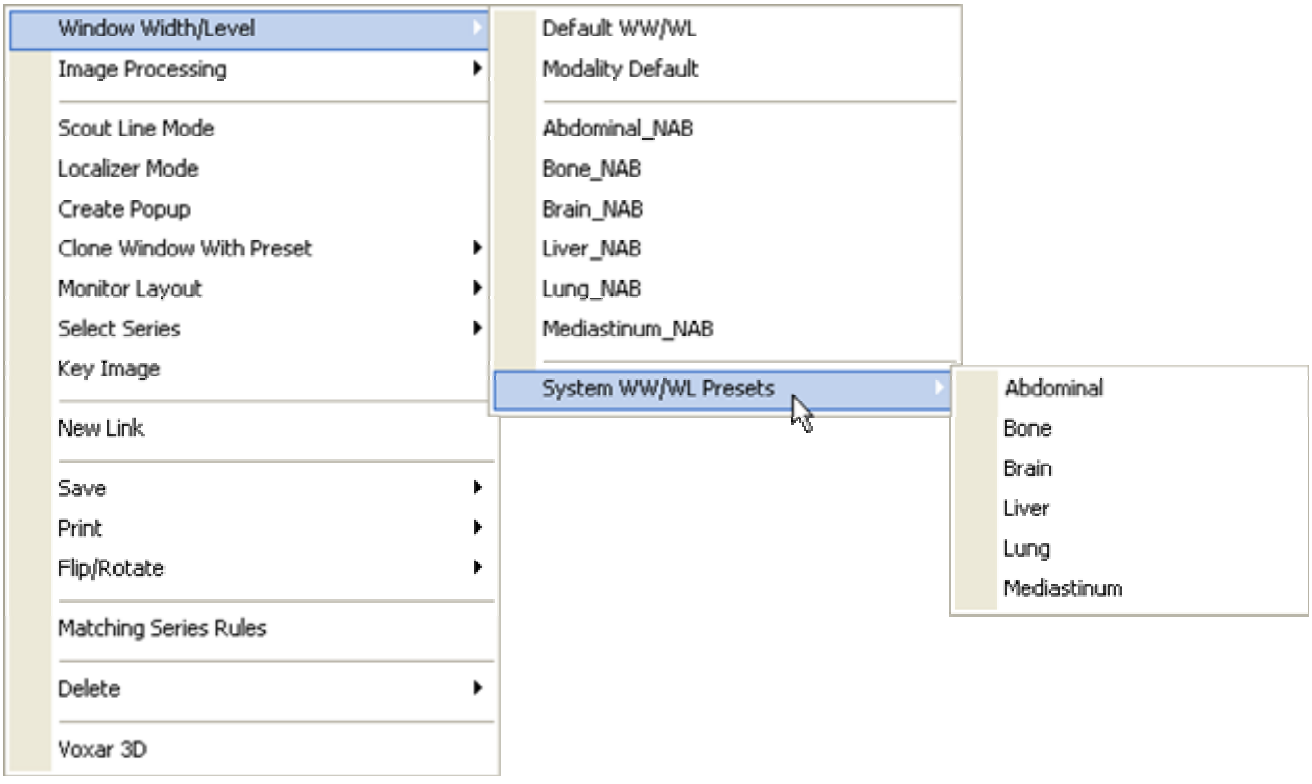
MR Pop-up Menu

The menu items are all explained in the sections below:

- **Window Width/Level:** iSite will use the modality's default Window Width/Level setting as the initial value for an image, where that information is available in the DICOM. This modality-specific function opens a sub-menu that allows you to choose from one of several preset window width and window level settings that have been found to be effective for viewing various types of exams. All exams include the Default WW/WL and Modality Default options. CR images also include Histogram Calculation as a default WW/WL option. In addition, any custom Window Width and Level presets that you have added in your preferences will be displayed.

  iSite also provides VOI LUT (Value of Interest LUT) access by right-clicking the desired image and selecting "VOI LUT Options" from the pop-up menu. iSite allows you to adjust WW/WL when VOI LUT options are activated. However, iSite's WW/WL options in the pop-up menu will be disabled..

  As seen below, CT Window Width/Level menus are broken into three separate areas, from top to bottom: the Default WW/WL and Modality Default WW/WL values, custom user Window Width/Level values (Abdominal_NAB, Bone_NAB, Brain_NAB, etc.), and System WW/WL Presets.



  You can display images/series with the preset System WW/WL values by right-clicking the desired image or series and selecting the preset from the popup menu, as seen in the image above.

iSite Radiology also allows you to create up to 9 custom Window Width/Level values in the Window Width/Level Preferences. Custom WW/WL options can be created for all modality types in the Window Width/Window Level section of the Preferences Area. To access this area, click the Preferences Button in the iSite Radiology Control Strip and then select the Window Width/Center item from the menu at left.

Please note that you can quickly select one of these custom user WW/WL settings by placing your mouse over the exam in question and hitting the corresponding number key (1-9) of the WW/WL value in the list.

For example, in the image above, there are six custom WW/WL values. These can be accessed by pressing the number keys 1-6.

- **Window Width and Level Calculations:** The follow is an explanation of how iSite Radiology calculates Window Width and Level values. WW/WL values are set for images when DICOM Source is not present and also when DICOM Source is applied, for example:

  1) If no DICOM Source is present and if image has 'Modality Default' WW/WL present, this will be used for images.

  2) If an image does not have 'Modality Default' values, and a DICOM Source is not present, Histogram Calculation is used for PT and NM on a per image basis, in addition to MR.

  3) If the image does not have 'Modality Default' values, WW/WL values are based on a Histogram of first image in the series.

  4) DICOM Sources Histogram is applied now for CT and 8 bit data, if specified in DICOM Sources.

  5) If DICOM Source is present, and Histogram is used, this will be applied to PT and NM series on a per image basis, in addition to MR.

  6) If a DICOM Source is present, and Histogram is used, WW/WL values will be used based on the histogram of the first image in the series.

  7) Color Ultrasound Window Width/Level Calculations are based on Grayscale Ultrasound. The default value is 256/128.

  8) If no 'Modality Default' or DICOM Source is present, for CTs only 500/50 WW/WL values will be used.

  9) If no 'Modality Default' or DICOM Source is present, 8 bits images (for example US images) will use the entire WW/WL range of 256/128.

- **VOI LUT Options:**

  Digitally acquired images must routinely be processed to produce clinically acceptable images. These corrections occur to correct detector defects, to enhance the image, to reduce noise, to alter the dynamic range or any of a number of methods used to improve the visibility of specific pathologies.

  One method to incorporate these corrections is the application of a VOI (Value Of Interest) LUT. This is one or more LUT(s) (look-up table) which reflect the specified processing for diagnostic presentation. VOI LUTs are used primarily with CR/DR images are extracted from the DICOM tag 0028,3010. This tag can reference one or more VOI LUTs associated with an image. Images can contain single or multiple VOI LUTs.

  By default, VOI LUT(s) are not initially displayed. If the image contains Single VOI LUT or Multiple VOI LUT(s), they will be listed under the 'VOI LUT Options' Menu from which they can be selected. All available VOI LUT(s) are listed under this menu. After applying a VOI LUT, you can select 'Disable VOI LUTs' to disable the VOI LUT application for the image and revert to Histogram Calculation WW/WL values.

  While the right-click WW/WL options are replaced by VOI LUT Options when VOI LUT is enabled, the image in question can still have WW/WL adjusted on top of the VOI LUT presentation. This modified VOI LUT can be seen in the image above (E25 PS Mod). This modified VOI LUT will be preserved when a Presentation State of the exam is saved. Please note that once a VOI LUT is saved in a presentation

state, the original VOI LUT may not be reproducible. If a subsequent Presentation State is created from this second VOI LUT, the pop-up menu will designated it as "PS MOD PS MOD" to indicate that the VOI LUT is removed by two degrees from the original.

If the original VOI LUT option was modified by adjusting the image WW/WL manually, the "Restore Default Settings" menu option will become available. Selecting this option will return the VOI LUT to the original settings and the renamed VOI LUT option will be removed from VOI LUT pop-up sub-menu. Selecting the "Disable VOI LUTs" option will re-enable Window Width and Level options in the pop-up menu.

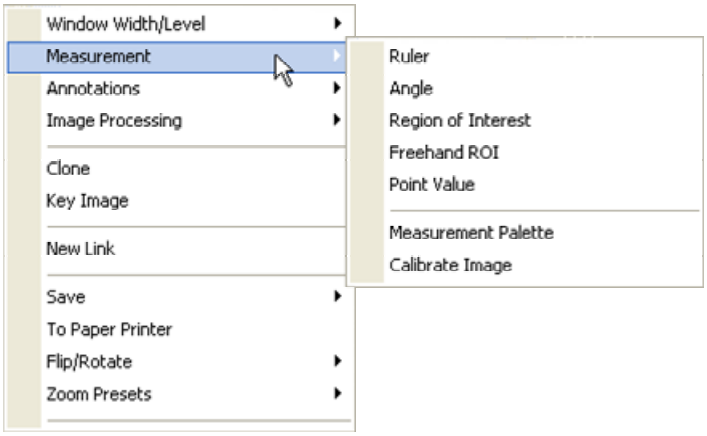
Please note that when a VOI LUT is selected, then subsequently disabled, the default WW/WL value will become histogram calculation based. The only way to recover the initial default WW/WL will be to reload the initial presentation state.

- **Measurement:** The measurement tools "Ruler," "Angle," "Region of Interest," and "Freehand ROI" allow you to indicate and measure specific areas of an image. The Point Value tool is used for measuring the Window Width and Level value of a single pixel. Please note that all measurements and annotations can be cleared from an image by right-clicking the image and selecting the "Delete all Measurements and Annotations" option.

  Warning: measurement values are modality dependant. The measurement values that iSite displays are derived from information sent by the modality responsible for generating the image being measured. If the modality is incorrectly configured or defective, iSite measurement values may be adversely affected and may be incorrect.

  Due to the inherent nature of projection radiography, when using iSite for measurements, Philips strongly recommends the use of an appropriately placed object of known size for determining what magnification factor has been applied to the image.

  Please note that annotations, measurement tools and the localizer cannot be used at the same time. Selecting a measurement tool will disengage the Show Localizer feature.


Window Width/Level
Measurement
Annotations
Image Processing
Clone
Key Image
New Link
Save
To Paper Printer
Flip/Rotate
Zoom Presets
Ruler
Angle
Region of Interest
Freehand ROI
Point Value
Measurement Palette
Calibrate Image

Ruler

The Ruler tool allows users to make linear measurements to, for example, measure the diameter of a tumor as a baseline prior to treatment, or measure the diameter of the appendix to diagnose acute appendicitis.

The measurement units for the Ruler tool are MM units if pixel spacing is specified in the DICOM tags. Otherwise it is in pixels. The level of accuracy is to tenths of a unit.

To initiate a Ruler Measurement, choose the Ruler option from the pop-up menu. Click on a point from which you want to measure and then drag the cursor to the second point, as in figure 1. A box next to the ruler will indicate the measurement of the span in millimeters or pixels, depending on the DICOM information available.

The Ruler measurement tool displays a letter next to each measurement. This allows you to place the measurement display anywhere in the image, as seen in figure 4. This naming convention is image-specific, meaning that you can have an "A", "B" or "C" in different images. These letters will be preserved in a Presentation State. If you want to move the entire ruler without repositioning either end, click anywhere on the ruler and drag it to the new location, as in figure 2. If you want to reposition either end of the ruler, click on that end and drag it to the new location, as in figure 3. You can reposition the end-points of the ruler at any time, as in figure 4.

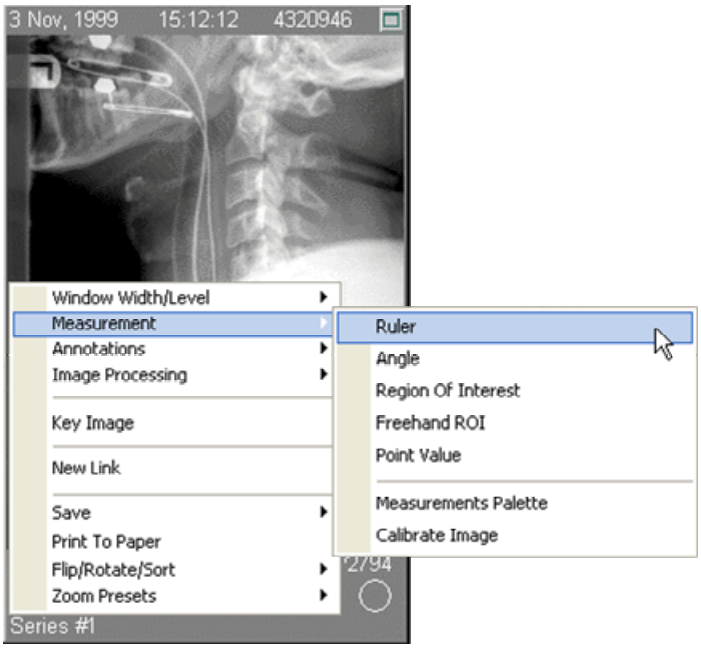


Figure 1

Figure 2

Figure 3

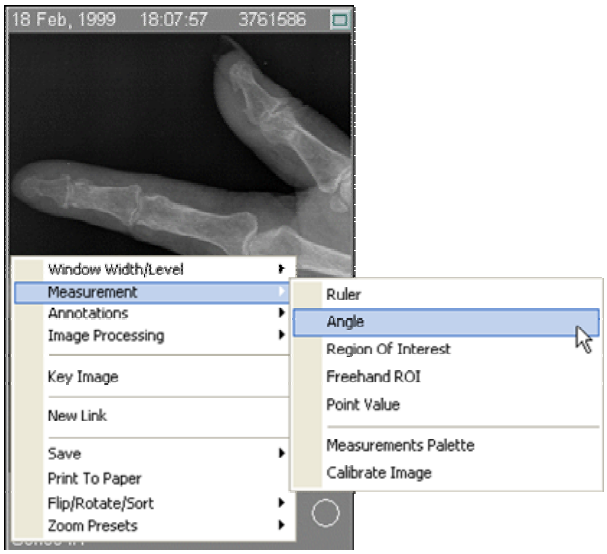
Figure 4

Angle

The Angle tool allows users to measure the angular alignment of two objects.

The measurement units for the Angle tool are degrees. The level of accuracy is based on the angle being computed as a floating point value and truncated to an integer. This implies a maximum angular error of approximately 0.5 degrees.

To initiate an Angle Measurement, choose the angle option from the pop-up menu. Click on the point that you want to serve as the angle's endpoint, move the cursor to a second point (the angle's apex) and click again. To complete the angle, move the cursor to the second endpoint and click again. The resulting, complete angle is shown in figure 1. A box in the angle will indicate the measurement of the angle in degrees. If you want to move the entire angle without repositioning either end-point, click on the center box and drag it to the new location, as in figure 2. If you want to reposition either end of the angle tool, click on that end and drag it to the new location, as in figure 3. The arms of the angle can be fully articulated by clicking anywhere on them and dragging them to a new location as seen in figure 4.



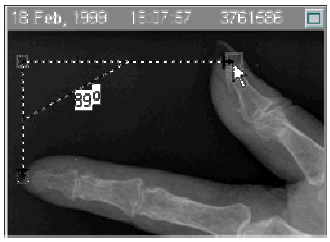


Figure 1

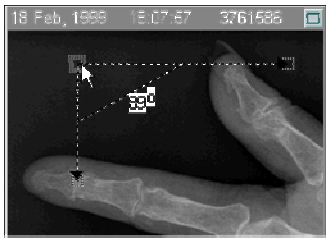


Figure 2

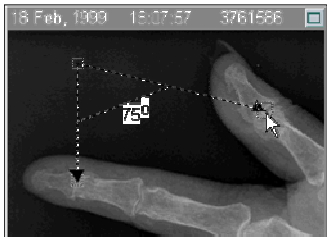


Figure 3

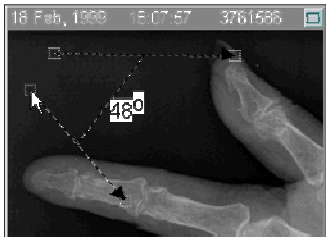


Figure 4

Cobb Measurements: The Angle Measurement tool can be used to take Cobb measurements.

Just as with a normal Angle measurement, to take a Cobb measurement click on the point that you want to serve as the angle's endpoint, move the cursor to a second point (the angle's apex) and click again.

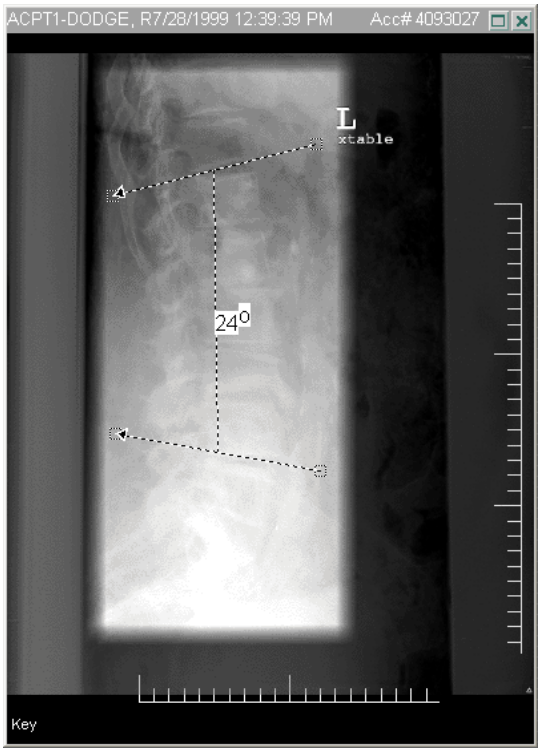
Note that when the angle measurement has been created, each end of the angle lines are active, indicated by the small squares at the end of the lines. Cobb measurements are in degrees, and the limits of accuracy are the same as the canonical angular measurements.

The user can then select either line to move and separate the point of the angle. This is demonstrated in Figure 4, above.

Move the upper portion of the angle measurement line to represent a parallel line with the superior aspect of the upper most vertebrae that is to be measured. Then move

the lower line to represent a parallel line with the inferior aspect of the lower vertebrae being measured.

The angle measurement represents the Cobb Angle measurement for this image, as seen below.



Region of Interest (ROI)

The ROI Measurement Tool allows users to measure the average data value for a circular region of an image.

The measurement units of the ROI tool are determined by the modality. For example, with CT the pixel intensity represents Hounsfield units. For other modalities in the iSite system, the pixels represent intensity. The units used are explicitly displayed, or in the case of pixels, left blank. Standard deviation is unitless and is a standard statistical measure of the dispersion of the values in the region of interest. The area measurement is CM^2, if pixel spacing is available; otherwise the units are pixels^2. The values for these measurements are computed in floating point and displayed so that the ROI measurement is presented to two decimal places. This means that the accuracy is dependent on the magnitude of the values in the region. The area is accurate to approximately 1 part in 10^5. The standard deviation is displayed to one decimal place, which means that the accuracy is dependent on the magnitude of the data.

To initiate the measurement of a Region of Interest, select "Region of Interest" from the pop-up menu. Click on a point from which you want to measure and then drag the

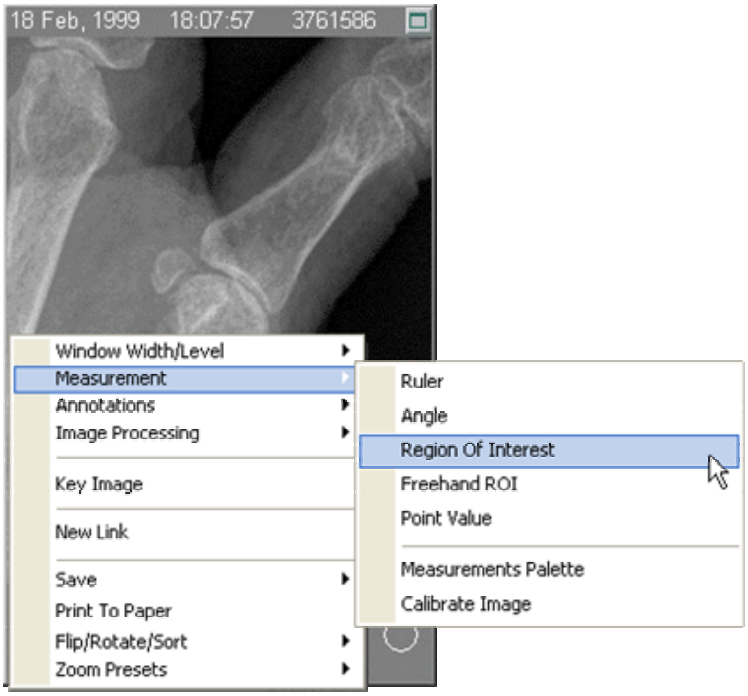
cursor so as to include the region you are interested in, as in figure 1. A circle will delineate the region and a box next to the region will indicate its area in centimeters squared or in Hounsfield units and centimeters squared when viewing a CT. To move the entire region without altering its size, click on the central box and drag the region to the desired location, as in figure 2. The region can be resized by clicking and dragging the box on the circle's perimeter so as to increase or decrease the area of the region, as in figure 3.

Please note:

- When performing a ROI measurement on an image that is displayed with a resolution smaller than the actual image (typically, an image in the rack for CT/MR or within an Image Popup Window for CR), there is a possibility that iSite will calculate the ROI using a sub-sample of the original image data. The value in this case is an accurate representation of the average measured pixel values represented by the interpolated sub-sampled image. This is a close approximation to the original pixel values.

- Anytime iSite calculates a measurement using a sub-sample of an image, the measurement result is displayed with a "~" (meaning approximate value) in front of it.

- When opening and displaying an image in full resolution, the ROI Measurement Values are recalculated. The "~" sign is no longer displayed, and there might be a small update/change from the measurement values displayed initially.



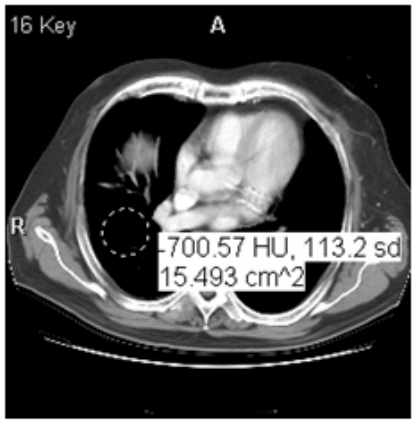


Figure 1

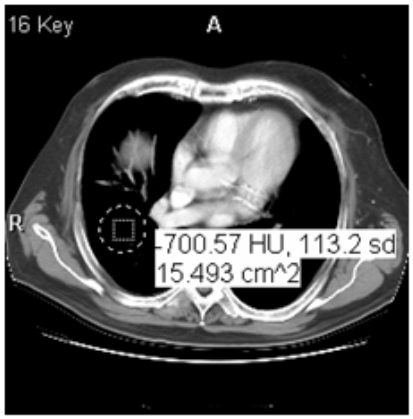


Figure 2

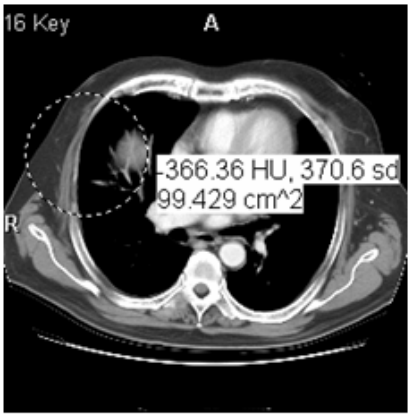


Figure 3

Freehand ROI

The Freehand ROI Tool allows users to measure the average data value for a non-circular "freehand" region of an image. The units and accuracy are identical to the ROI tool, described above.

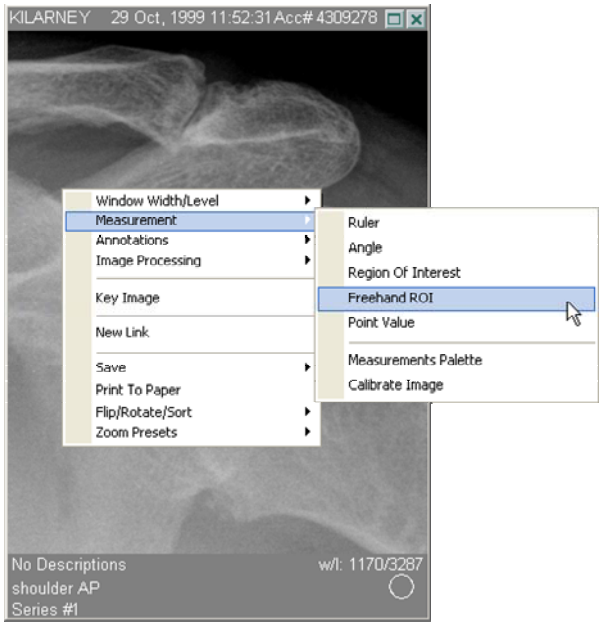
The Freehand ROI tool is similar to the Region of Interest tool. To initiate the Freehand Region of Interest tool, right-click on an image or series and select the "Freehand Region of Interest" option "Measurement" section of the pop-up menu. Using your cursor, left-click and drag the cursor to enclose the desired area, as seen in Figure 1. The shape of your outline can be as complex as necessary. The only restriction is that your lines must not intersect. Release the left mouse button when you have finished the outline. iSite will display the enclosed area of the outline in centimeters squared or Hounsfield units for CTs. Any portion of the outline can be selected and dragged to adjust the outline's contours as seen in figure 2. The outline can also be dragged to any part of the image by clicking on the box next to the end-points of the outline, clicking and dragging to the desired location, as seen in Figure 3.

Please note:

- When performing a Freehand ROI measurement on an image that is displayed with a resolution smaller than the actual image (Typically, an image in the rack for CT/MR or within an Image Popup Window for CR), there is a possibility that iSite will calculate the ROI using a sub-sample of the original image data. The value in this case is an accurate representation of the average measured pixel values represented by the interpolated sub-sampled image. This is a close approximation to the original pixel values.

- Anytime iSite calculates a measurement using a sub-sample of an image, the measurement result is displayed with a "~" (meaning approximate value) in front of it.

- When opening and displaying an image in full resolution, the Freehand ROI Measurement Values are recalculated. The "~" sign is no longer displayed, and there might be a small update/change from the measurement values displayed initially.



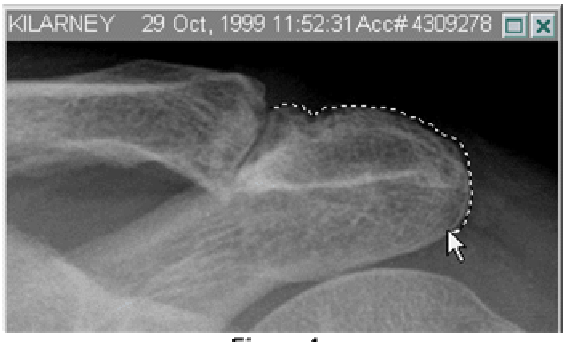


Figure 1

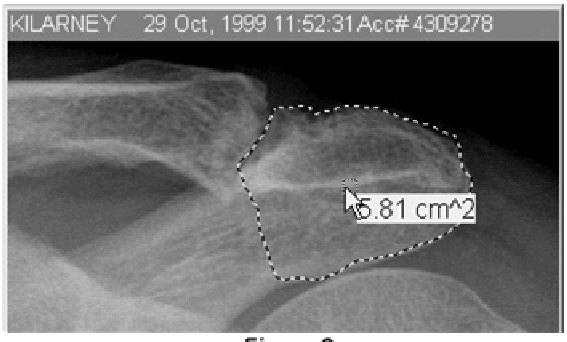


Figure 2

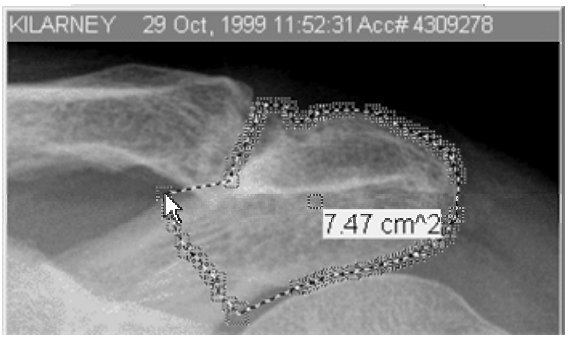


Figure 3

Point Value

The Point Value Tool allows users to measure the value of data points at a specific point on the image. This feature gives the luminance value for single pixels of the original DICOM image. In other words, the value given is not related to what is being displayed on your screen. Rather, it is the value for a reference point which is mapped to the original DICOM image.

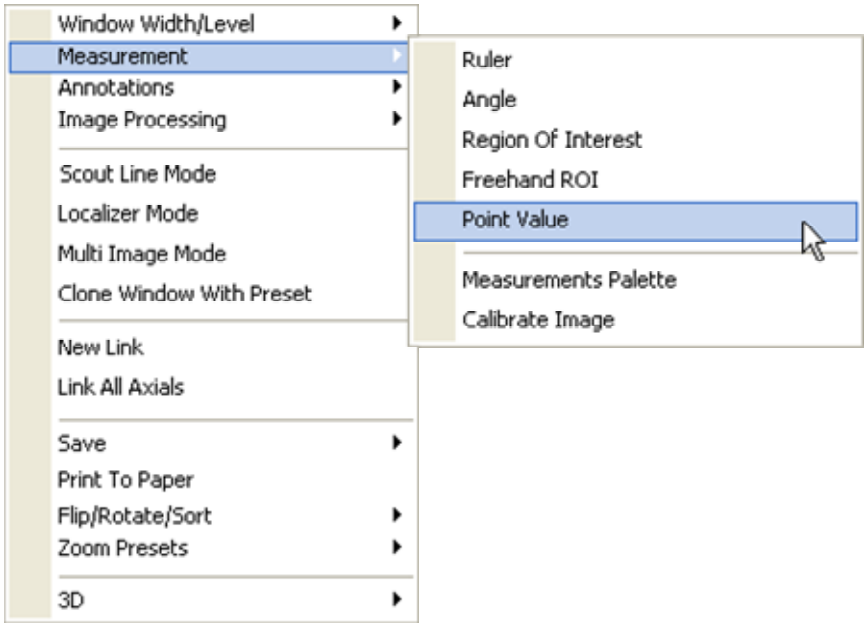
The measurement units depend on the modality type and the information provided in the DICOM image header, and will be either:

- Hounsfield units (sloped/intercept) for CT
- Mapped pixel intensity for VOI LUT
- Pixel intensity, as remaped by modality LUT or rescale slope/intercept processing as per DICOM standard

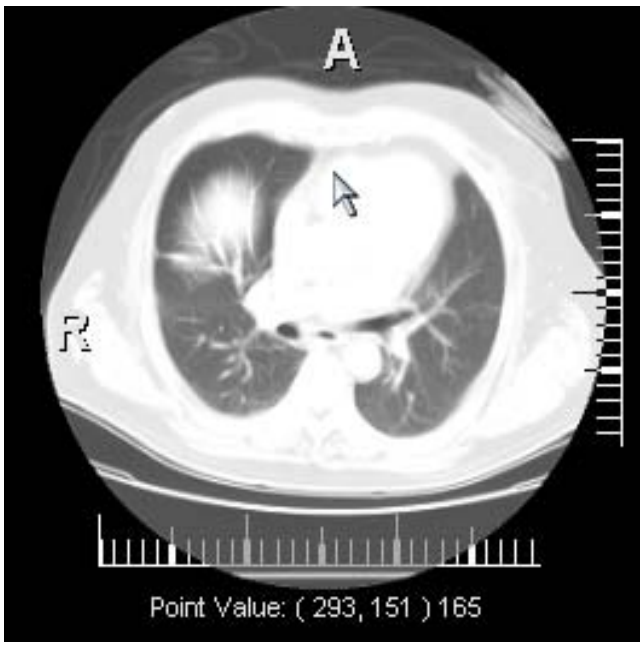
The level of accuracy is the following:

- True pixel value, no error for untransformed data
- Hounsfield units based on -1024 air as per DICOM standard, no error
- If slope/intercept is provided, then the pixel value is Y = mx +b, with floating point values rounded to the integer pixel value. This means that the error is dependent on the magnitude of the value, with a maximum deviation of +/-0.5.

To use this feature, select the "Point Value" option from the Measurements sub-menu, as seen below.



When you select this option, screen overlay text will appear at the bottom of the image. This text will read "PV:" followed by X - Y coordinates in parentheses that will change as you move your cursor over the image. The X coordinate value starts at zero from the left and increases in value towards the right side of the image. The Y coordinate value starts at zero from the top and increases in value towards the bottom of the image.



Please note:

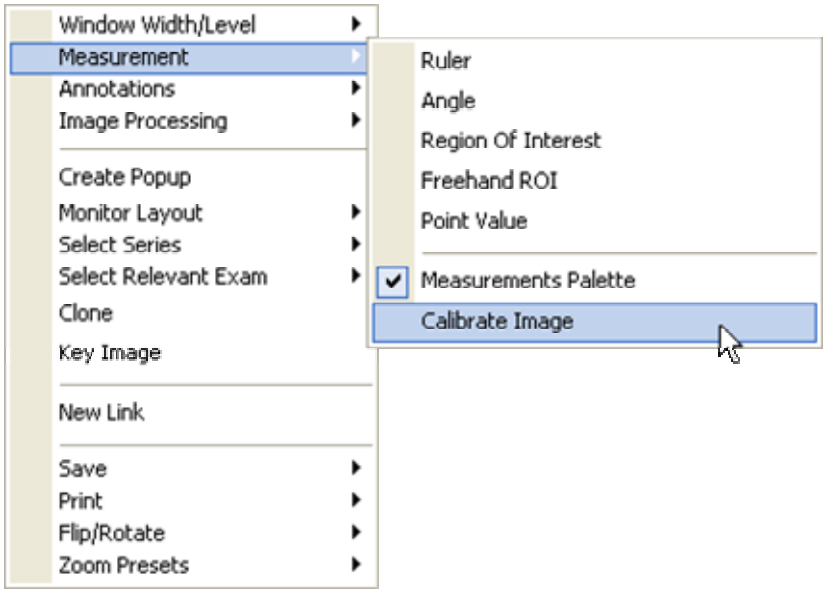
- Anytime iSite calculates a measurement using a sub-sample of an image, the measurement result is displayed with a "~" (meaning approximate value) in front of it.

Measurement Palette: If you will be making numerous measurements of an image, iSite Radiology provides a floating Measurement Palette that helps to streamline your workflow. To use the Palette, select the Measurement Palette option from the Measurement submenu in the pop-up menu. As seen below, the floating Measurement Palette will appear.

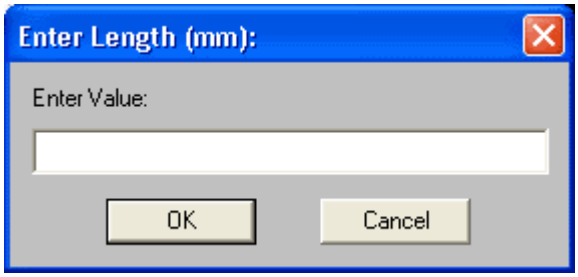
From left to right, the tools are the ruler, angle, region of interest, freehand region of interest and text annotation. To use a tool, click the corresponding button and then place your cursor over the image you wish to measure. Only one tool can be selected at a time.

The Measurement Palette can be dragged to any location on your screen. To close the Palette, click the close button. You can also toggle the measurement tool off and on by hitting Control-key+"M" on your keyboard.

Calibrate Image: This feature allows you to calibrate the image on your screen for certain known measurements. Select the Calibrate Image option from the Measurements sub-menu as seen below.



After selecting "Calibrate Image" place your cursor at the end-point of a known distance and then drag to the end of the known distance. When you release your mouse button, iSite Radiology will display the following dialog:



Enter the length of the known distance in millimeters and click the "OK" button. From now on, all measurements of distance and area will be based on the newly defined scale. In addition, the interactive, scaled rulers will be resized.

Please note that the calibration tool cannot be used with images that have valid DICOM-defined pixel spacing. In addition, be advised that using the calibration tool on an image that has already been calibrated will alter the measurement values for that image.

Ultrasound Measurements: iSite Radiology supports length measurements on Ultrasound B-Mode images.

There are a few instances when measurements on Ultrasound images may not be possible. For example, sometimes the scanner does not send iSite Radiology the necessary calibration information needed for measurements. iSite Radiology does not support measurements on Spectral, M-Mode or Dual B-Mode images at this time.

In these instances, you might want to use the calibration tool to manually calibrate the images.

- **Annotations:** The Annotations feature is a quick and useful tool for annotating images. There are several annotation styles that can be applied including line, arrow, triangle, text and freehand. These annotation styles are seen demonstrated in the image at the bottom of this section. Please note that when an annotation is added to an image, that image automatically becomes a "Key Image".

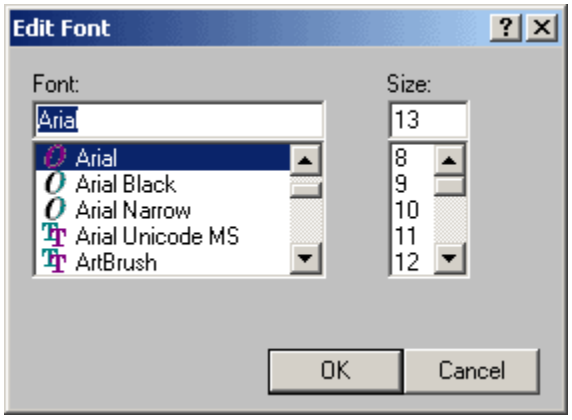
  All measurements and annotations can be cleared from an image by right-clicking the image and selecting the "Delete all Measurements and Annotations" option.Please note that annotations, measurement tools and the localizer cannot be used at the same time. Selecting a measurement tool or working with annotations will disengage the Show Localizer feature.

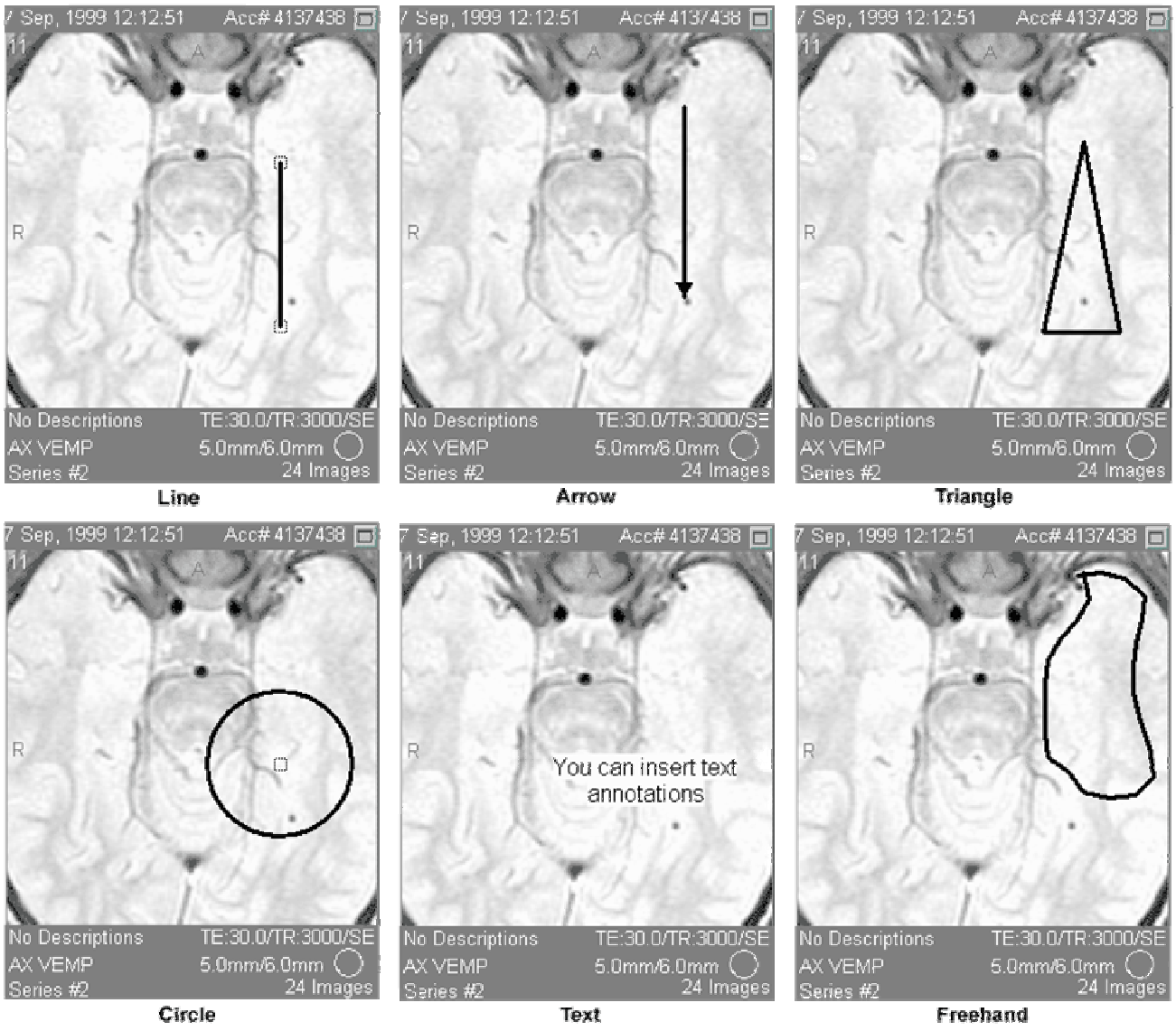
  To apply the line, arrow, triangle or freehand tools, select the option from the

pop-up menu, click the image where you wish to initiate the annotation and drag your mouse cursor as desired. When you release the mouse button, the annotation will be complete. To use the text annotation, select the "text" option from the pop-up menu and click the image at the point where you wish to place the text annotation. A dialog box will appear. Type your annotation into the textbox and click the "OK" button. Your text will be displayed on the image. All annotations can be moved by clicking anywhere on the annotation and dragging it to the desired location.

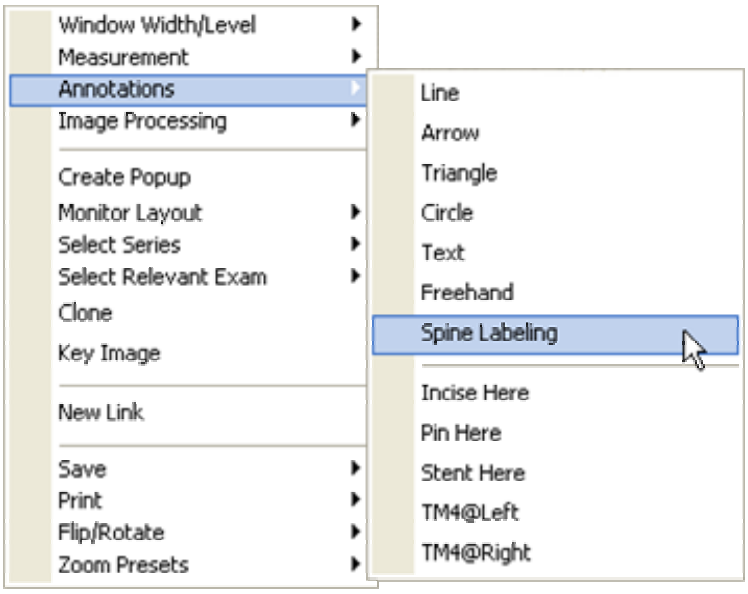
- The line style and font of an annotation can be changed by right-clicking any annotation. If you are configuring any type of annotation except for text annotations, you will see the "Edit Line Style" dialog, as below. Otherwise, you will see the "Edit Font" dialog, also pictured below.

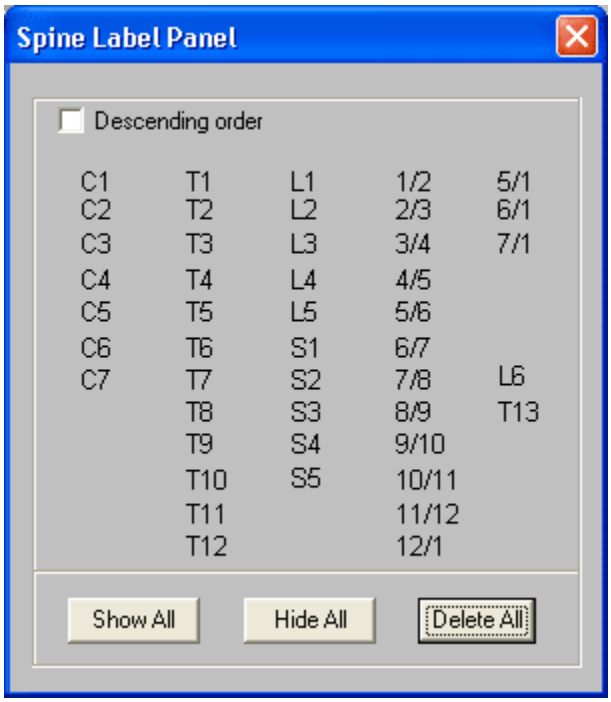
  Configurable options include font size (for text annotations), text color, line color, line size and line style. When you have finished customizing the annotation style, click the "OK" button to save your changes and return to reading. Custom annotations can also be created and personalized by the iSite System Administrator. If you have any questions regarding custom annotation styles, please ask your iSite System Administrator.



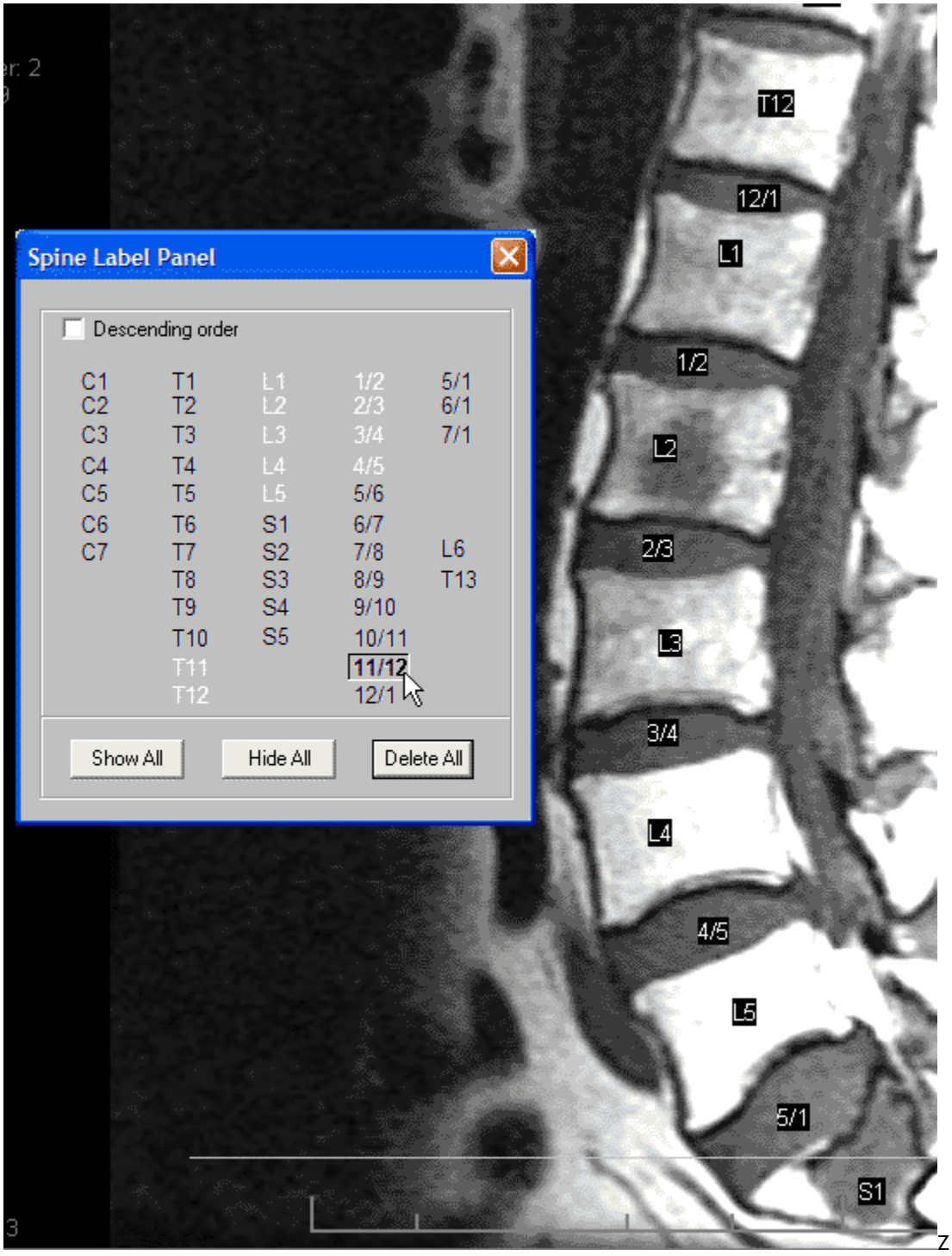


Spine Labeling Tool (Images of the spine only): The spine labeling tool allows you to place markers at each vertebra or vertebral disc. The spinal tool is only available on images or series showing the spine. To engage the tool, select "Spine Labeling" from the "Annotations" section of the pop-up menu, as shown in figure one. A dialog will appear, as shown below in figure two.




Spine Label Panel
Descending order
C1 C2 C3 C4 C5 C6 C7
T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12
L1 L2 L3 L4 L5 S1 S2 S3 S4 S5
1/2 2/3 3/4 4/5 5/6 6/7 7/8 8/9 9/10 10/11 11/12 12/1
5/1 6/1 7/1 L6 T13
Show All
Hide All
Delete All

There are two ways to label the image. The first is by clicking on the desired label from the dialog and then clicking the location in the image where you wish the label to be placed. The second, faster, way of using the spinal labeling tool is to highlight the label that you wish to use for annotation and begin by clicking on the image. At every click iSite Radiology will place a label from the list. The order of the automatic labeling can be changed from ascending to descending by clicking the check box at top. Labels can by hidden or deleted by clicking the buttons at the bottom of the dialog. To delete an individual label, click that label with your mouse and hit the "Delete" key on your keyboard. The end result will look like the example below.



Please note that the Spinal Labels L6 and T13 are not included in automatic labeling but can be chosen manually from the Spinal Labeling Pop-up Dialog.

Labels, as well as any other annotation you might use for the image, will be saved once you have created a presentation state of the particular configuration.

- **Image Processing**

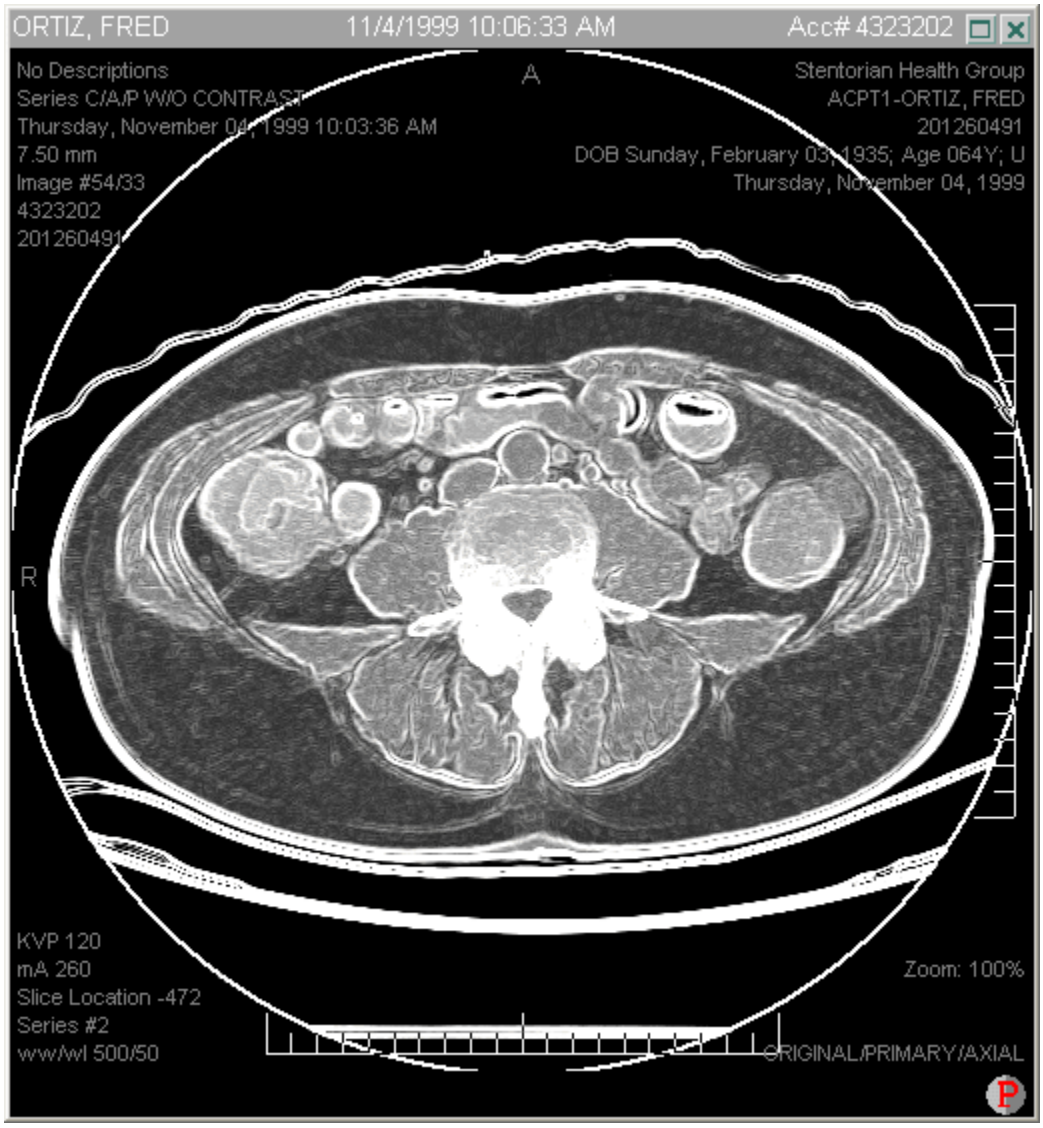
  Several important options for processing images are available, including Invert Image, Edge Enhance, Edge Detect, Median Filter, CLAHE (Contrast Limited Adaptive Histogram Equalization), Pixel Replication, Bilinear Interpolation and Bicubic Interpolation.

  Options for Edge Enhance, Edge Detect, Median Filter, and CLAHE can be set in the User Preferences. Default settings are adjusted by the iSite System Administrator on an institution-wide basis. For more information on adjusting your Image Processing settings, please see the User Preferences Section of this manual.

  Please note that Image Processing options are applied only to the current image and not an entire multi-slice series. In addition, Image Processing filters are not preserved in Presentation States, nor can they be printed to a DICOM device. Images with Image Processing can be printed to paper, if desired.

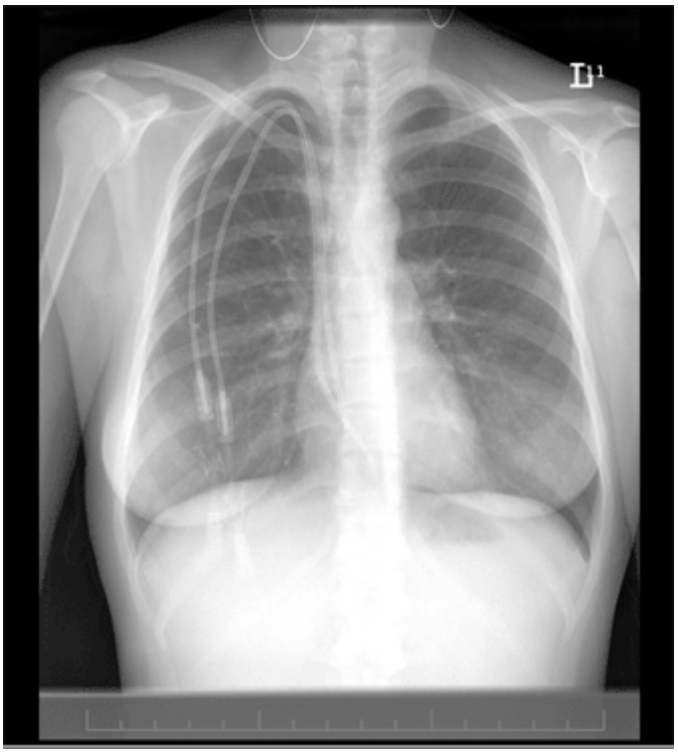
  The appropriate tool is completely dependent on the type of image you are viewing. You may wish to try various Image Processing tools to find the best solution for viewing the enhanced image.

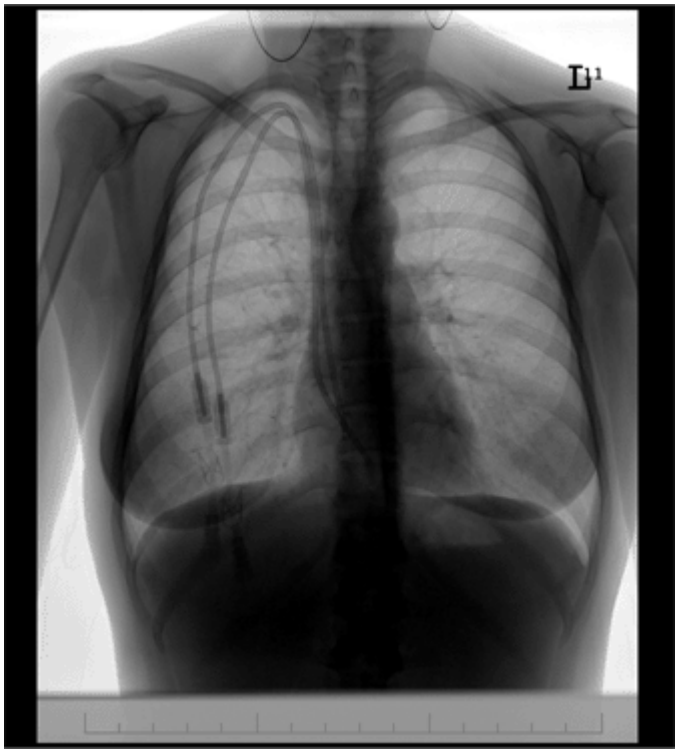
  With the exception of the Invert Image tool, anytime an Image Processing Filter is applied to an image displayed in a pop-up window or in the Diagnostic Monitors, iSite displays a "P" (Processed) Icon in the lower right-hand corner, as seen below. This icon is not displayed for images in the Exam Racks



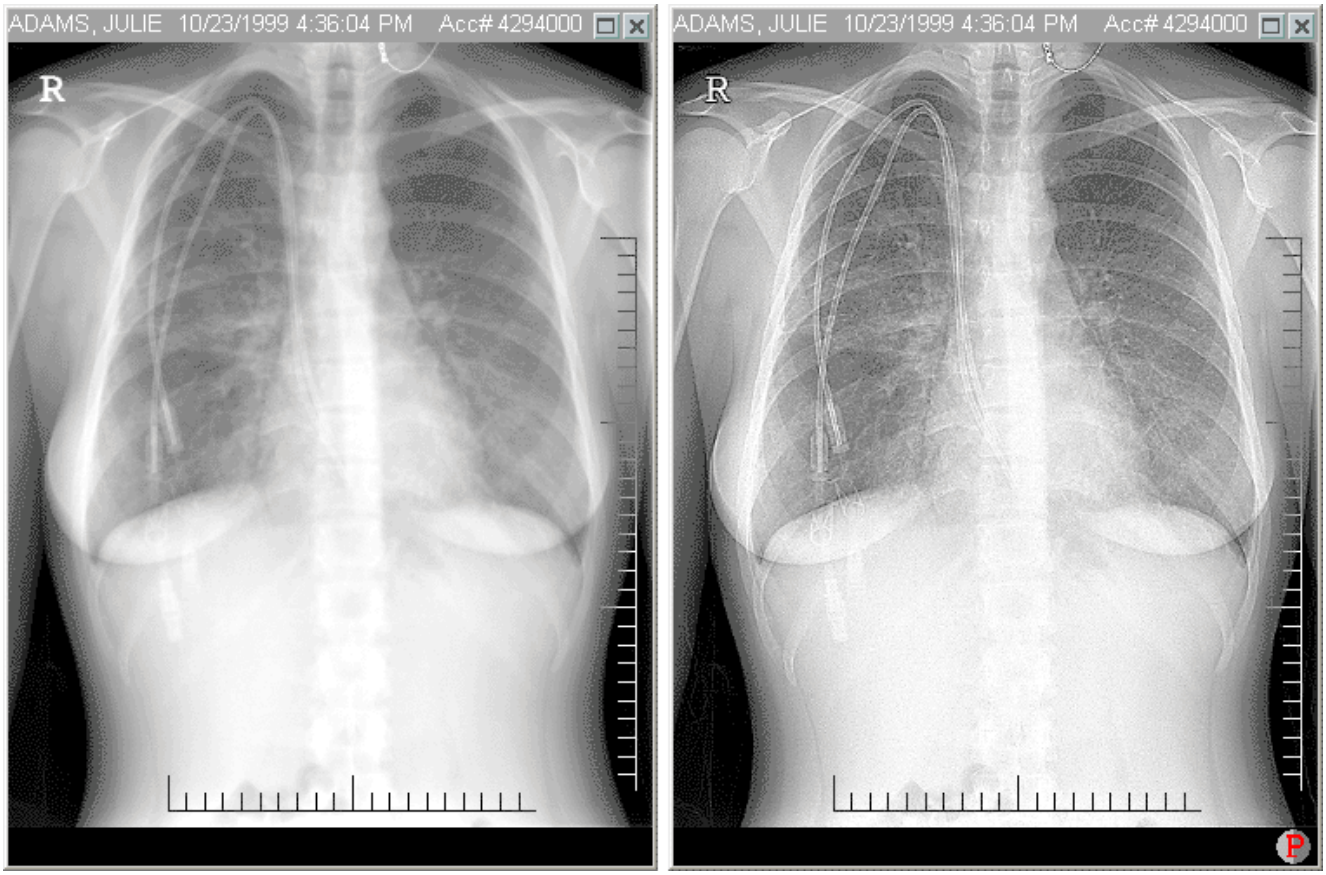
Please note, iSite will apply the Edge Enhance and Edge Detect Image Processing algorithm to all images within a stack series. In other words, these Image Processing Filters will be applied to all images within a particular series when selected. As such, when Image Processing Filters are applied to each and every image of a stack series, there may be a slight display delay as iSite actively processes these images in multi-image mode or in fast cine mode.

Invert Image: This function reverses the black and white coloration of the highlighted image.

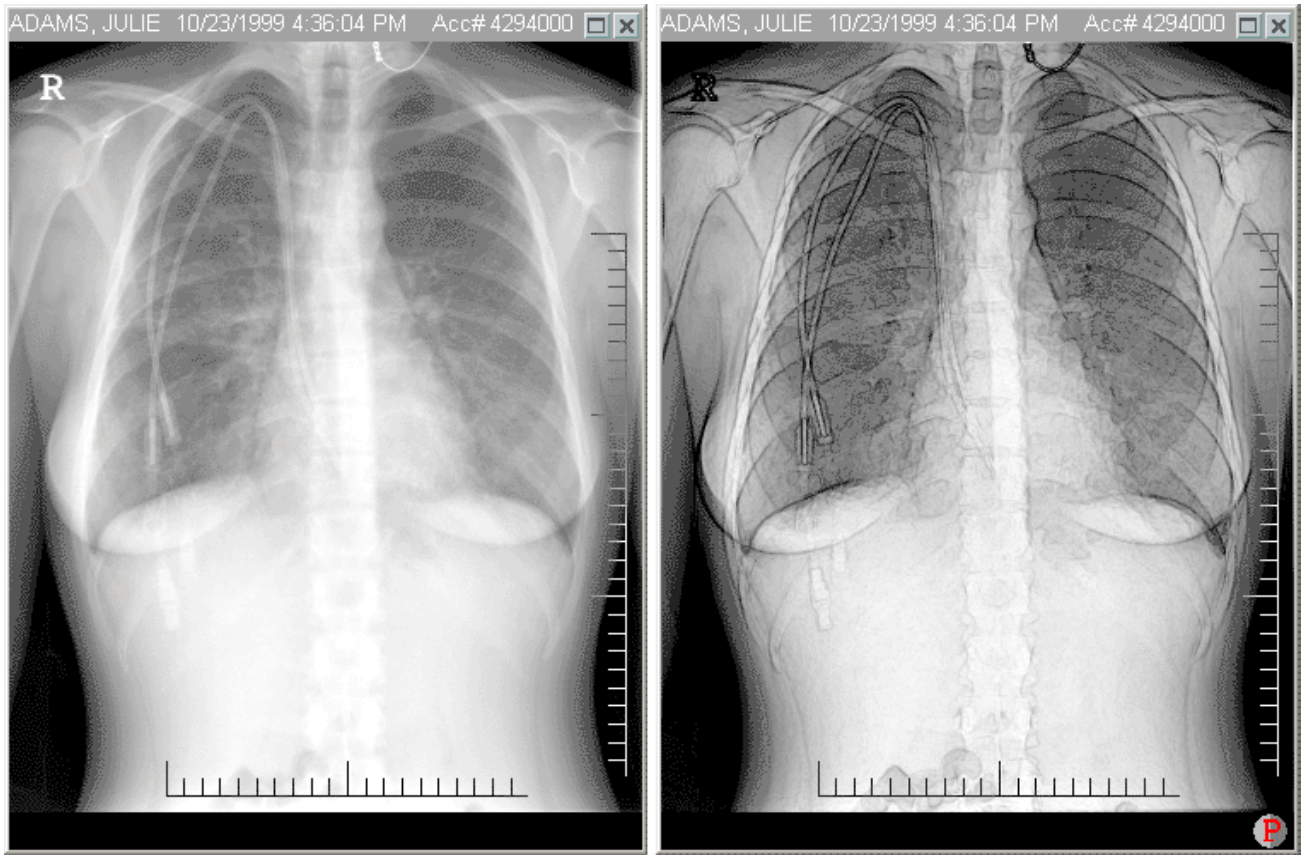




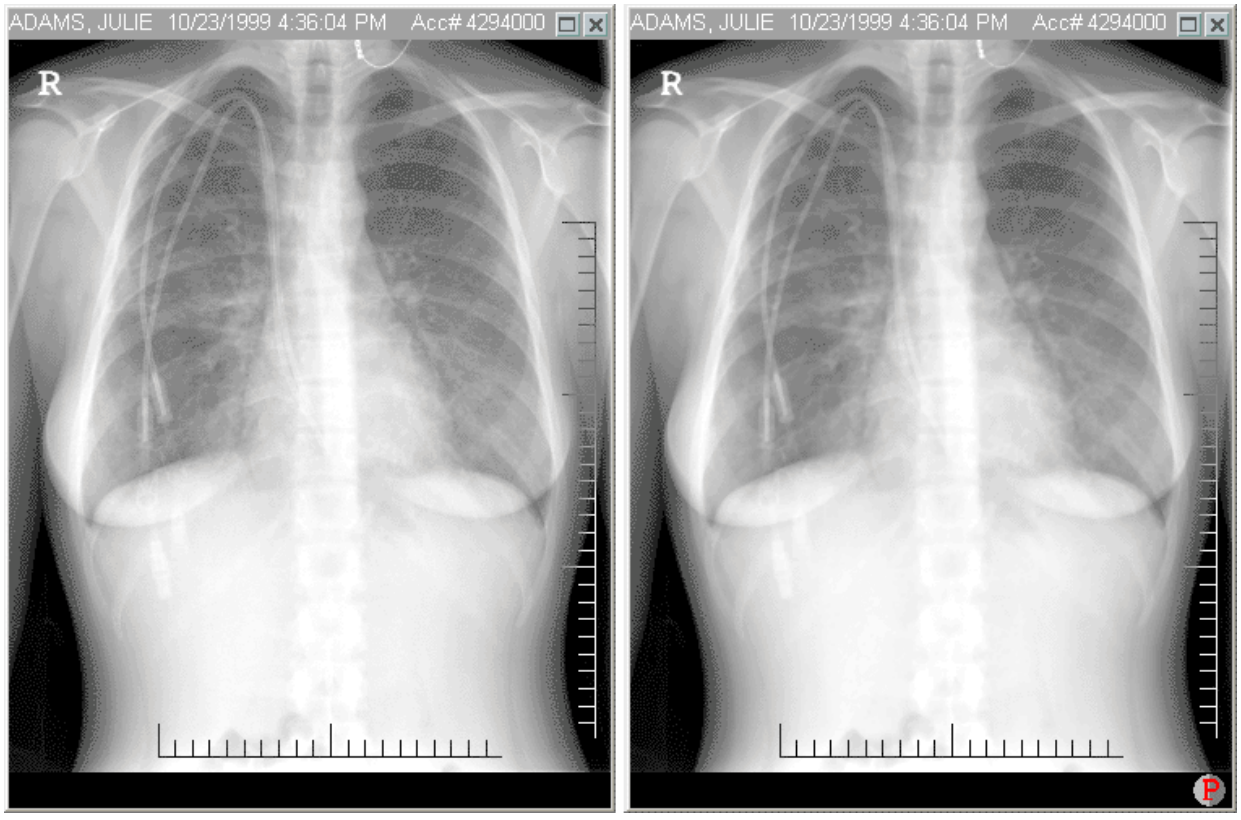
Edge Enhance: Located in the Image Processing sub-menu, Edge Enhance utilizes a Laplacian method to increase the visibility of edges in the image, as seen in the CR image below. The Edge Enhance tool has three different degrees of application (light, medium and strong). The default setting can be changed in the Image Processing section of the Preferences. To increase or decrease the degree being applied to the Edge Enhancement, use the "," (comma) and "." (period) keys while highlighting the image in question by placing your mouse over it.



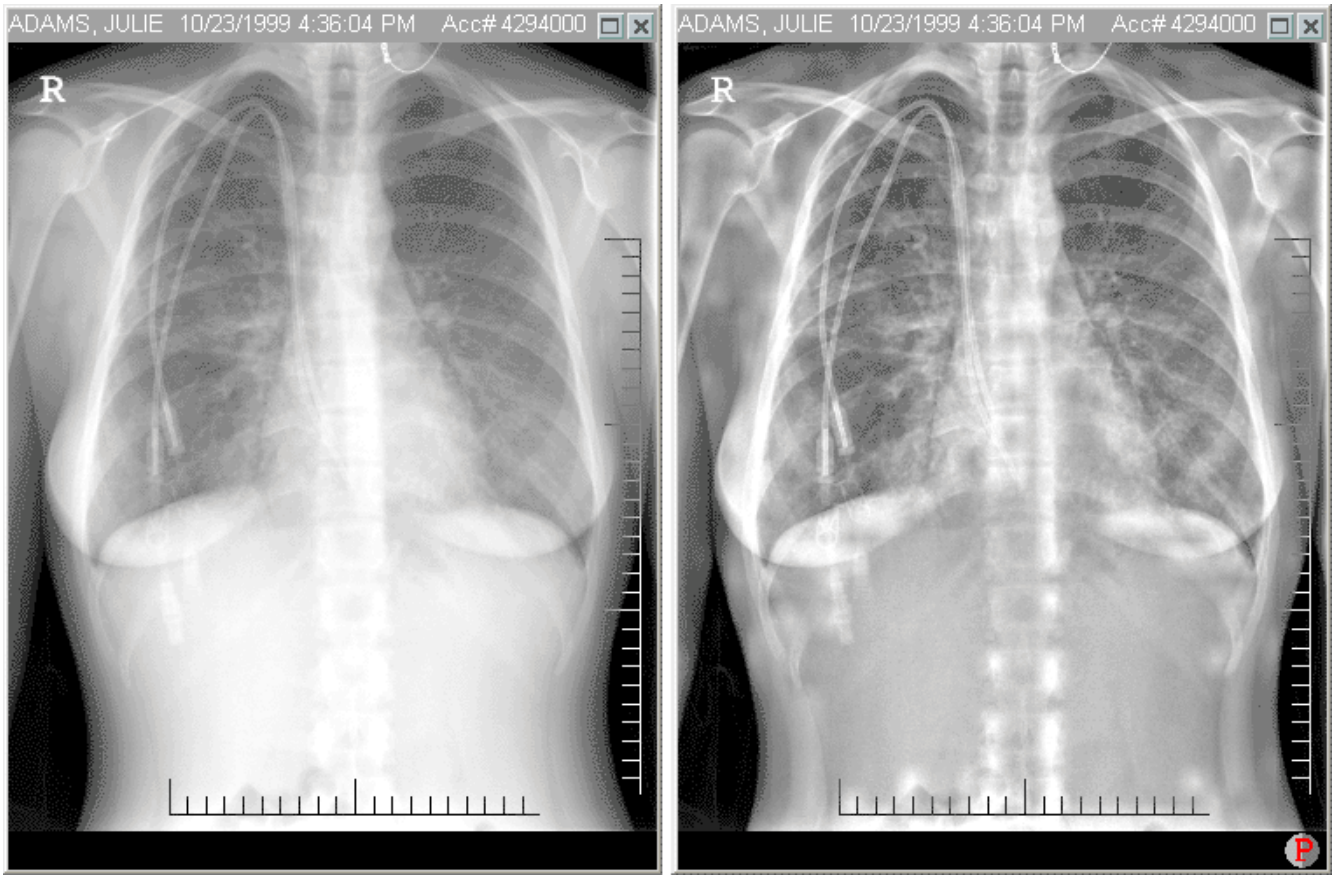
Edge Detection: Located in the Image Processing sub-menu, Edge Detection provides an alternative to the Edge Enhance tool, utilizing a Sobel operator to increase the visibility of edges. The Edge Detection tool has three different degrees of application (light, medium and strong). The default setting can be changed in the Image Processing section of the Preferences. To increase or decrease the degree being applied to the Edge Detection, use the "," (comma) and "." (period) keys while highlighting the image in question by placing your mouse over it.



Median Filtering: Located in the Image Processing sub-menu, the Median Filtering tool utilizes a common filtering method to reduce noise in the image.



CLAHE (Contrast Limited Adaptive Histogram Equalization): Located in the Image Processing sub-menu, this tool utilizes an adaptive form of histogram equalization that enhances the contrast adaptively across the image. CLAHE may be used with the following modalities: CR, DX (DR,DF), MG, XA (DS,RG) and OT. Please note that when CLAHE is applied, the Window Width/Level of the image will be automatically adjusted. Please note that when CLAHE is selected, the WW/WL will be automatically recalcualted using Histogram Calculation because the data range will have changed. The initial WW/WL values will be restored when CLAHE is turned off



Interpolation Schemes: Located in the Image Processing sub-menu, iSite Radiology provides three types of interpolation schemes for you to choose from: Pixel Replication, Bicubic Interpolation and Bilinear Interpolation. A checkbox, as seen above, shows which scheme is in use for interpolation.

Of the three schemes, Pixel Replication is the fastest while Bicubic is the most accurate.

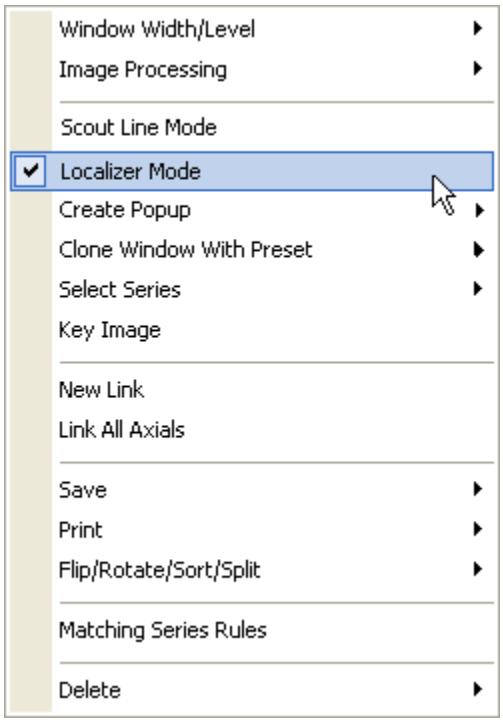
When you use the pop-up menu to select an interpolation scheme, the scheme is selected only for that image or series.

- **Scout Mode (MRs and CT Scout Images only):** Use this toggle function to display interactive scout navigation lines on the selected image. Scout Mode works in conjunction with Localizer Mode, described in detail below. Please note, you can quickly toggle Scout Mode on and off by hitting the "F11" key. Please note that the state of the Scout Mode for a particular image or series is not saved as part of Presentation States.

- **Localizer Mode:**

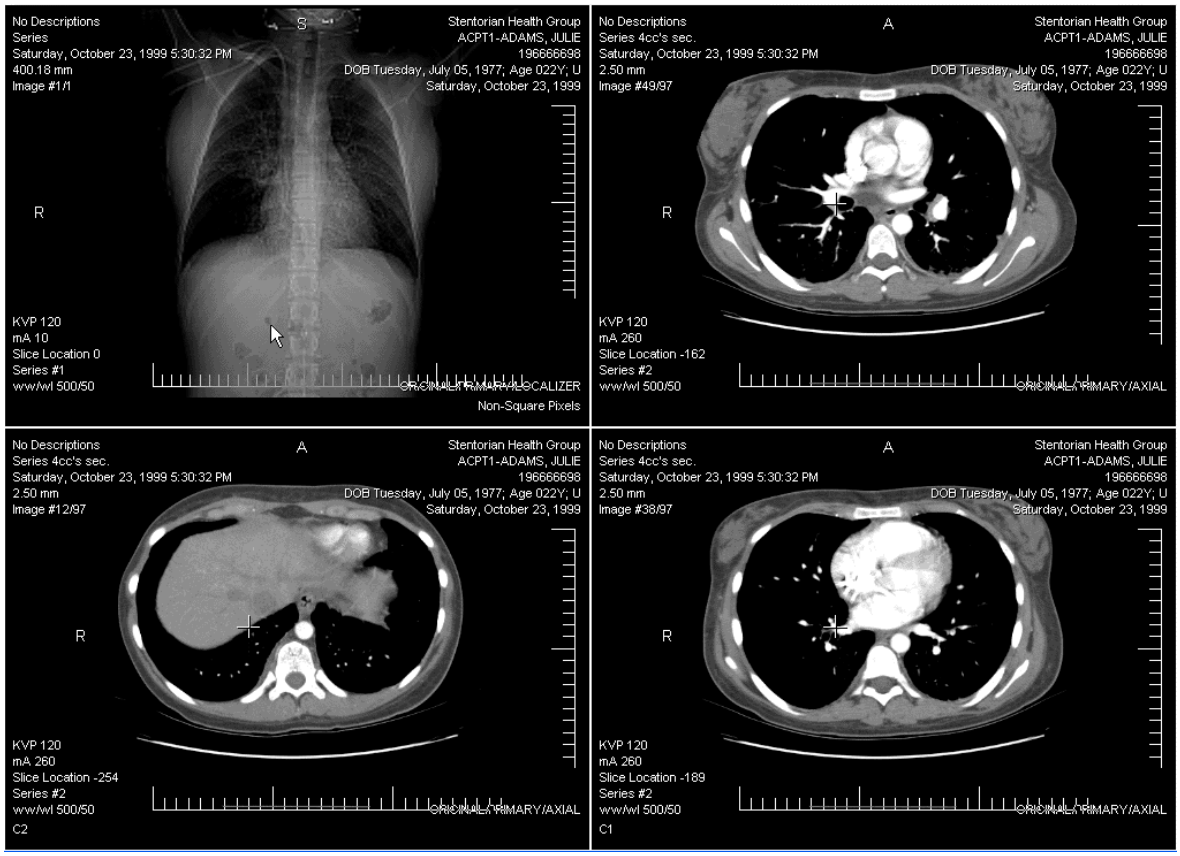
  Like the Scout Lines, the localizer tool helps you visualize and navigate to a location in multiple series with different orientations. Please note that the state of the Localizer Mode for a particular image or series is not saved as part of Presentation States.

  To initiate the Localizer function for a specific series or image, right-click and select "Show Localizer", as seen below. Please note that Localizer Mode can be toggled on and off by hitting the "F12" key.



  When you select the "Show Localizer" option, a crosshair (+) will be placed in every image or series of an exam at x/y coordinates that correspond to the location of your cursor. As you move the cursor over the specified image or series, all crosshairs will move in sync.

In the example below, when the cursor is passed over the first series at left, crosshairs appear at the corresponding location on every other series in the exam.



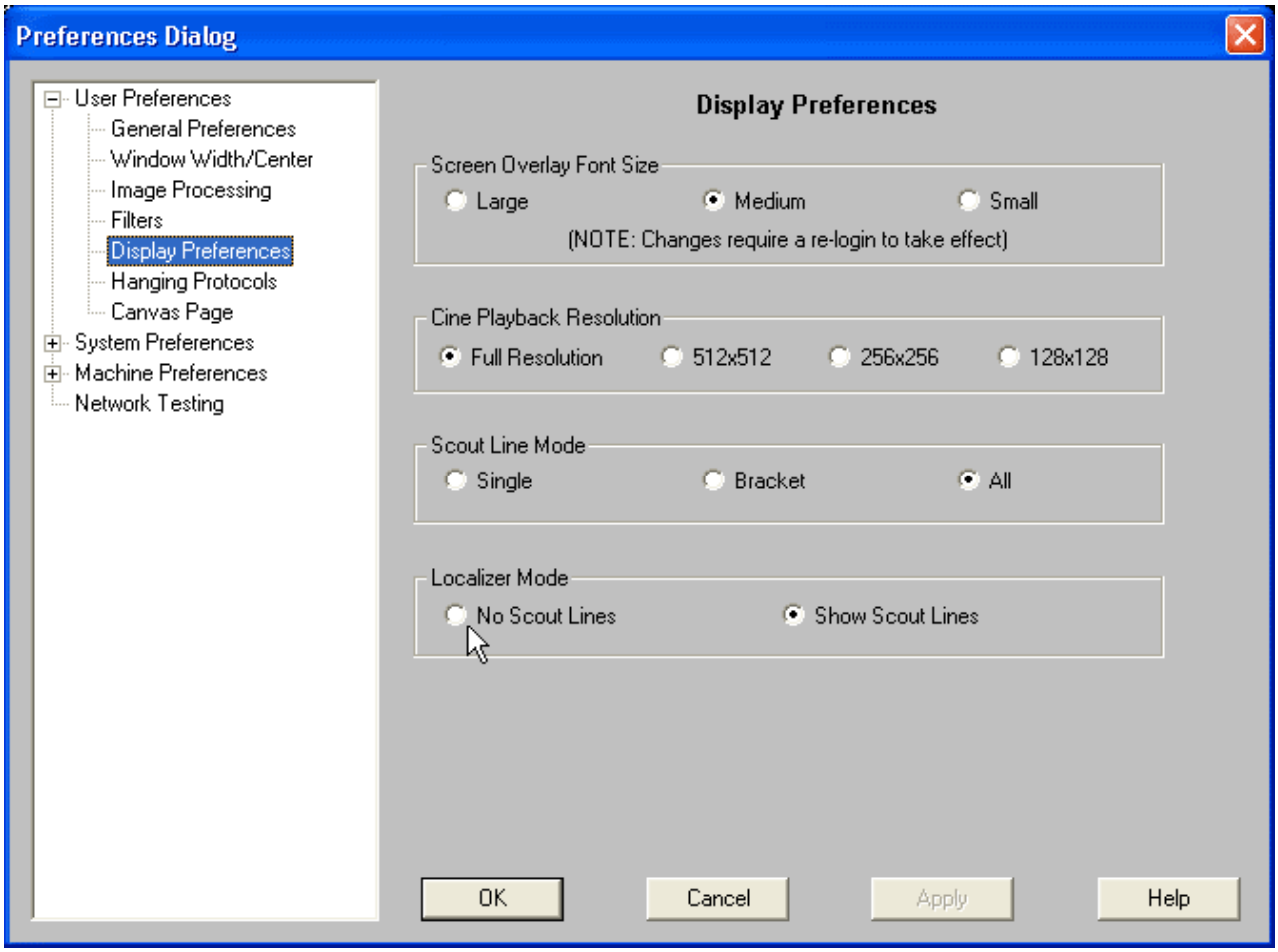
As with the Link feature, the Localizer can be used to navigate through multiple series simultaneously. By holding down the left mouse-button and dragging the cursor, all exams with the same DICOM frame of reference, regardless of their specific orientations, will move in synch. Please note that, unlike other images, clicking and dragging will not adjust the Window Width/Level of Localizer-enabled images.

By dragging the cursor, as seen above, all series move in synch. The benefit of using this feature instead of the Linking tool is that series with different orientations (Axial, Saggital and Coronal) can all aligned simultaneously.

One particularly good use case for this tool are PET/CT studies, where the Localizer tool can be used to create a "ghost" cursor on the other Axial Slices. (This will only work if the CT and the PET images have the same DICOM Frame of Reference).

Please note that annotations, measurement tools and the localizer cannot be used at the same time. Selecting a measurement tool or working with annotations will disengage the Show Localizer feature.

By default, you will see scout lines appear when you click and drag. These scout lines can be removed in the Display Preferences section of the User Preferences, as seen below.



For more information on these preferences, please see the Preferences Chapter.

Warning: Using the localizer to navigate a multi-phase series

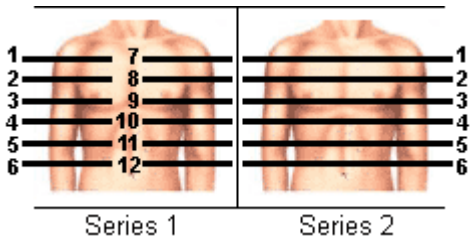
Multi-phase studies contain multiple images with the same location identifier. Paging through a multi-phase series that not has been split will typically result in jumping back to the first slice location each time the user reaches the end of each phase within the series.

If the localizer is used to navigate through a multi-phase series, you will notice that the other linked series are synchronized on location and basically display the image with closest location to the one displayed in the master series.

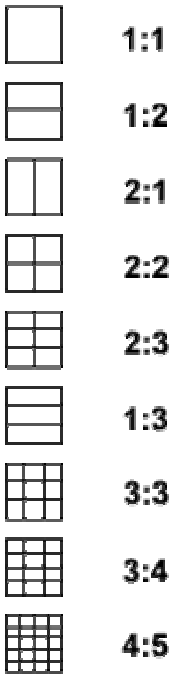
If the non multi-phase series is used as the master, iSite will try to find the image with the closest location in the multi-phase series, and because there are

potentially multiple matches, iSite will display the best match from the first phase. (In this example iSite would never display image 7 through 12.)

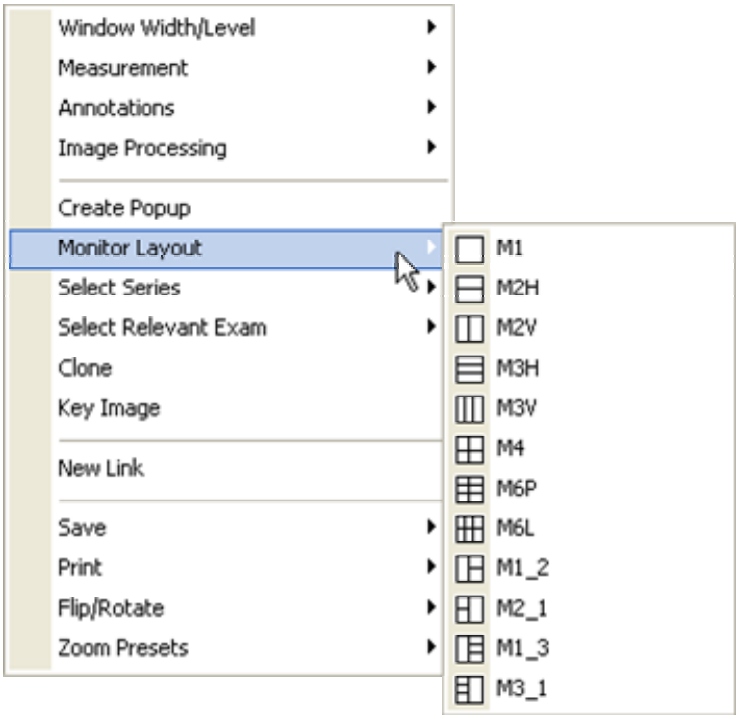
In other words, it is not possible to review all images of a multi-phase series by paging through another series while using the localizer functionality.



- **Multi-Image Mode (series only):** This feature allows you to display tiled series slices in one single frame. The available options, in "column:row" notation, are 1:1, 1:2, 2:1, 2:2, 1:3, 3:3, 3:4 and 4:5. The resulting configurations are as follows:

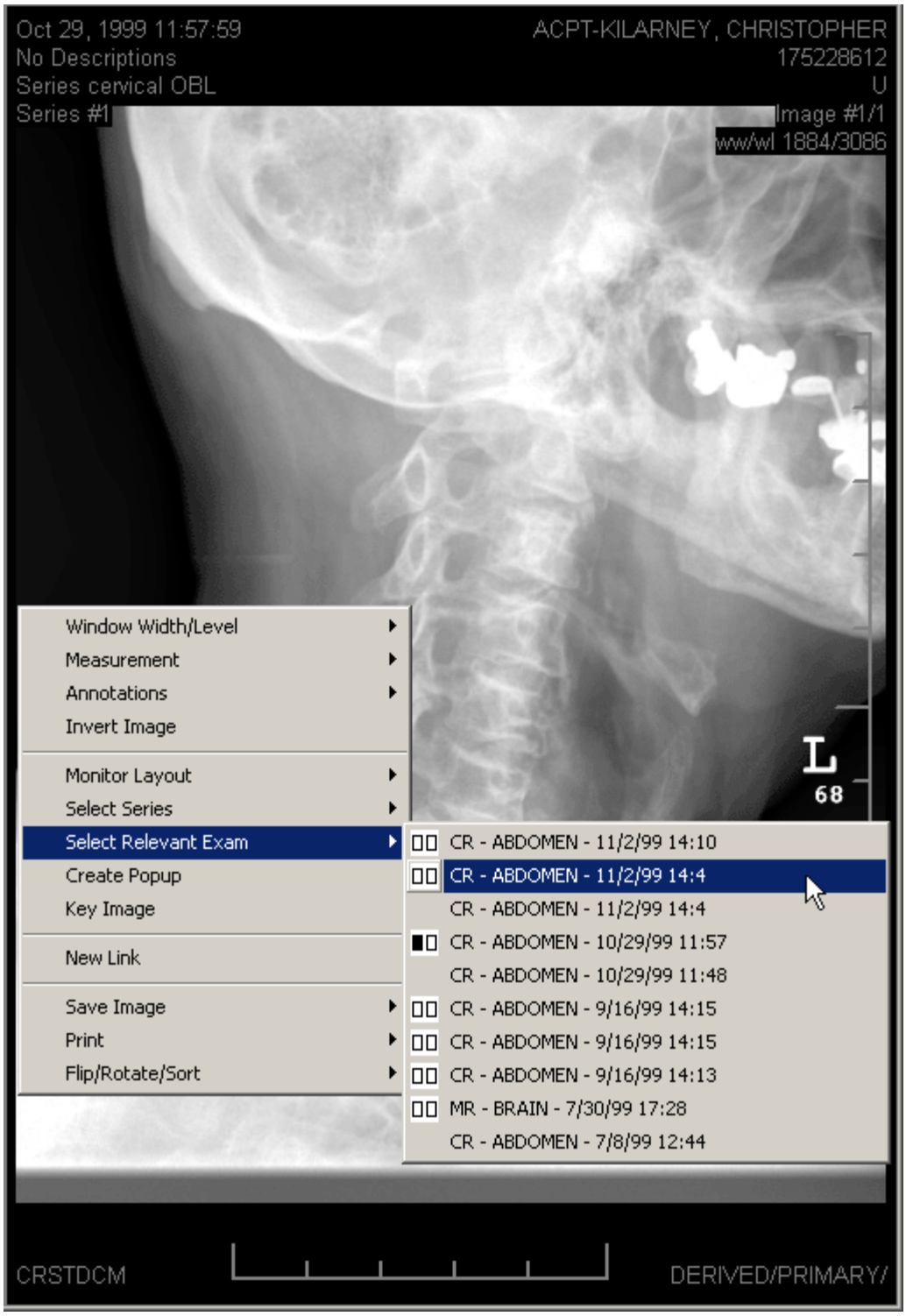


- **Monitor Layout:** This feature allows you to quickly configure the monitor you are viewing. The available options are shown below.



- **Series Selecting:** This option allows you to quickly switch between different images or series in the exam that you are viewing. Selecting a different image or series from the Series Selecting menu will change the current image or series being displayed to the image or series you have indicated. Please note that this function is not available from an expanded image in the Canvas Page.

- **Select Relevant Exam:** This option allows you to quickly switch between different exams from the patient currently being viewed. To access this feature, right-click an image or series from the Diagnostic Monitor and choose the "Select Relevant Exam" item, as seen below.



The resulting list of exams has been determined to be relevant to the image or series you were previously viewing. The criteria for "relevant" is set on a site-by-site basis by your iSite System Administrator. Exams in the list that are loaded in your Canvas Page are indicated by the ▯▯ symbol. If an exam is already being displayed in your Diagnostic Monitor, this will be indicated by the ■▯ or ▯■ symbols, depending on which monitor the exam is displayed in. When you select

an exam from the list, it will replace the currently displayed exam in your Diagnostic Monitor.

- **Clone Window with Presets/Clone/Remove Clone:** This function allows you to duplicate any image or series in order to simultaneously view images with different window level values. For example, one of the cloned CT series could be displayed with the "Bone" preset window level value and another cloned CT series could be displayed with "Lung". If you are cloning a CT series from the Diagnostic Exam Racks, select the Clone Window with Presets option. In this situation, the cloned CT will be displayed in the Diagnostic Exam Racks with a "C" to designate it as a clone. If you are cloning a CT series from a series that has been expanded from the Diagnostic Exam Racks, choose the clone option.

  Use the "Remove Clone" option, available from the Diagnostic Exam Rack pop-up menu, to remove a cloned CT series from the Diagnostic Exam Rack and the Diagnostic Monitor. This option is not available in either the Diagnostic Monitors or in the Expanded Windows. In the first case, remove the clone in the Diagnostic Exam Rack and it will disappear from the Diagnostic Monitor. In the latter case, simply close the Expanded Window to remove the clone.

- **Create Popup:** This feature allows you to quickly create an Expanded Window of the image or series in question.

- **Key Image:** This feature allows you to mark a particular image or series slice as a "Key Image". This feature is particularly useful when preparing presentation states or educational presentations. This image will be identified by the text message "Key" at the lower right-hand corner of the image. Images can also be marked as a "Key Image" by clicking the space bar while your mouse is over the desired image. The space bar toggles the "Key Image" status; if pressed again, the image will no longer be a "Key Image".

  Use the Tab key to cycle forward through all the visible key images and Shift+Tab to cycle backwards. Please note that when a measurement or an annotation is added to an image, that image automatically becomes a "Key Image".

  The Key Image feature can work in conjunction with the Key Image Series option, which places all Key Images in a series at the beginning of each Exam Row.

- **Linking:** The linking feature allows you to link two or more images and zoom, pan or view slices simultaneously. Images and series can also be linked by dragging their respective pop-up windows together. Please note that iSite will only link images and series that are appropriate for linking. For more details on the criteria iSite employs for allowing images and series to be linked, see the "Types

of Links and Linking Options" section below.

The linking feature provides users with the ability to synchronize multiple images or series with an image or series that they have designated as the "master". In this case, "synchronize" refers to the fact that iSite will try to do two things:

- Apply to all linked images the same image "navigation" options that are applied to the master, like Zoom or Pan. (Functions such as flip, invert, rotate and WW/WL adjustment remain independent.)

- Line up the images from the linked series with the one currently selected as the master. As a result, the user will be able to page through multiple series simultaneously. The series that the user is paging through will act as the master and all the linked "slaves" will display the image in their series that is at the closest location to the master.

  Types of Links and Linking Options: iSite supports the creation of five different kinds of links:
  - Single Image
  - Axial*
  - Sagittal*
  - Coronal*
  - Oblique**
  - Mirrored***

  * A series is considered to be Axial, Sagittal, or Coronal if it is oriented within 5-degrees of the corresponding axis.
  ** A series is considered to be oblique if (1) It is not within 5-degrees of one of the major axes (ex: Axial, Sagittal, Coronal) or (2) It contains images of different orientations such that they are not aligned with the same axis.
  *** = Mirror linking is available for Mammography (MG) only.

  The following linking options are available:

  - Linking of single images, like CR or DR images within one or multiple exams, same modality type. **Example:** Linking a "CR CHEST AP image" of a new exam with a "CR CHEST AP image" from a prior exam.

  - Linking of single images like CR or DR images within one or multiple exams, different modality types. **Example:** Linking a "CR CHEST AP image" with a "DR CHEST AP image" from a prior exam.

  - Linking of series, like CT or MR series that are of the same orientation within one or multiple exams, same modality type. **Example:** Linking All Axials in CT CHEST Exam that contains multiple Axial Series.

  - Linking of series, like CT or MR series that are of the same orientation within one or multiple exams, different modality types. **Example:**

Linking a CT HEAD Axial Series of a new exam with a MR HEAD Axial Series of a prior exam.

- Linking of Mammography (MG) images using the Mirrored Linking feature.

How to Initiate Linking/Unlinking

- To initiate a link, right-click the desired image or series and then select "New Link". Then right-click the subsequent image or images and select "Join Link". (Note: an image can only be joined to a link of its type, ex: Single Image, Axial, Sagittal, Coronal or Oblique.)

- If more than one series in the same exam has the same orientation and the same reference, you will be able to link them all simultaneously using the Link All Axial, Link All Sagittal, Link All Coronal or Link All Oblique option.

- Along with selecting the "New Link" function from the Image Pop-up menu, cloned or expanded windows of CTs and MRs with the same frame of reference and the same orientation can be automatically linked by juxtaposing their lateral margins.

- To unlink an image, highlight that image and select "Leave Link". To unlink all linked images, select "Unlink All" from the pop-up menu.

Link Indicators: There are three different link symbols. The Thumbnails display a plus symbol (+), expanded thumbnail images display the link symbol ( ) and the linked images in the diagnostic monitors display the word "LINKED" (if this has been configured for your institution in the system preferences section). These symbols will appear on the images as they are linked.

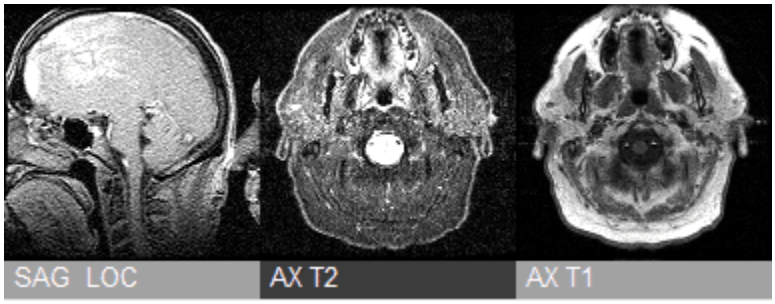
Aligning Linked Series: DICOM contains information as to the frame of reference, which provides exact information as to the location of the patient at the time of scanning. Typically, images in the same exam will have the same frames of reference and images in different exams will have a different frame of reference.

If the linked series are in the same frame of reference, iSite will automatically align them when the link is created. If the linked series are not in the same frame of reference, iSite will not be able to perform the initial alignment automatically. It relies in this case on the user to align the series prior to linking them, and then uses information about the slice spacing to synchronize them as the user navigates through them.

It is possible for the user to adjust the initial alignment (whether it was done

automatically or manually). This is done by temporarily disconnecting a series-image from a link and manipulating it independently by pressing the "Shift-key" while performing mouse or keyboard actions.

Linking Selected Exams: Multiple images or series from different exams can be selected an linked by clicking the images or series while holding down the "Shift" key. The information area of the image window will change to a darker shade, as seen below. The image in the center is selected.



Once the images are selected, right-click and select the "Link Selected Images" option. Images that meet the linking criteria as described above will be linked.

Mirrored Linking for Mammography (MG): Mirrored linking is only available for mammography studies. By the nature of how these images are acquired, mammography studies typically capture bilateral breasts and display images which are positioned sidelong either to the left or right side of image windows.

The linking functionality for mammography allows you to link images at opposite coordinates (mirrored linking). With Mirrored Linking engaged when you zoom into an image that is positioned along the right side of an image window, iSite will automatically zoom into the other image positioned along the left side of the linked image window.

To engage Mirrored Linking, select the first MG image, right-click and choose the "New Link" option. Select the MG image to be linked, right-click and choose the "Link as Mirror" option. Mirrored Linking will now be engaged. To add additional MG images, select those images, right-click and choose the "Join Link" option.

Warning: General warning message

The current implementation of the linking functionality allows you to synchronize other windows/series with the window/series you are currently browsing through. In other words, there is one master window/series (typically the one that you select with your mouse) and iSite will attempt to line up the images of the other linked windows.

Therefore, users should always review each and every series by paging through them individually and never rely on linking as a way to review all images within a given exam. There are a number of known use cases where simply browsing through a series that is part of a link will NOT DISPLAY ALL the images that are available in the other linked series.

Warning: Linking a multi-phase series with another series

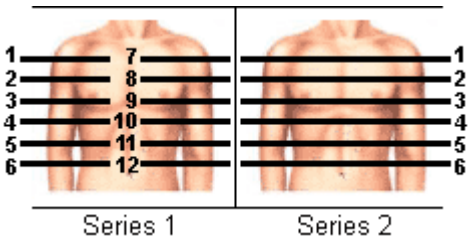
Multi-phase studies contain multiple images with the same location identifier. Paging through a multi-phase series that has not been split will typically result in jumping back to the first slice location each time the user reaches the end of each phase within the series.

If a multi-phase series is used as the master, you will notice that the other linked series are synchronized on location and basically display the image with the closest location to the one displayed in the master series.

If a non-multi-phase series is used as the master, iSite will try to find the

image with the closest location in the multi-phase series. If there are multiple matches, iSite will display the best match from the first phase. (In this example iSite would never display image 7 through 12.)

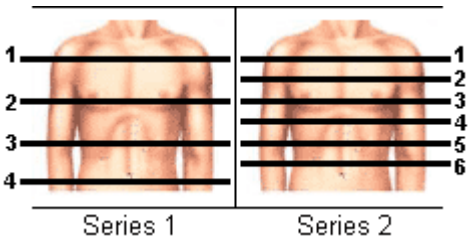
In other words, it is not possible to review all images of a multi-phase series by paging through another series and use the link functionality



Warning: Linking multiple series with different slice thickness

An exam might contain multiple series acquired at different (or even variable) slice thickness. For example, one series could be acquired at 10mm slice thickness and one at 2mm. If a user now links these series and cines through them, using the very thick 10mm series as the master, many images from the 2mm series will be skipped. If the user cines through the images using the very thin 2mm series as the master every single image of the 10mm series will be displayed.

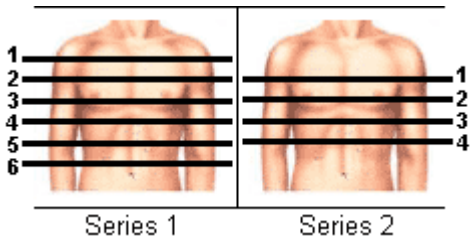
In other words, cineing through multiple series simultaneously is possible via the link option, but images will be skipped, unless the series with the thinnest slice thickness is used as the master. This is because iSite will synchronize images based on location.



Warning: Linking series that contain different body parts

Series that contain different body parts or simply cover a larger/smaller region of the body can be linked as well. For example a CT series that contains a CHEST-ABDOMEN-PELVIS may be linked with a CT series that contains only a CHEST. By navigating through the CT CHEST series as the master, the user will never see the ABDOMEN-PELVIS of the other series. Conversely, by using the CHEST-ABDOMEN-PELVIS as the master series the user will be able to view the CHEST images side-by-side, as well as at the ABDOMEN-PELVIS images of the master series.

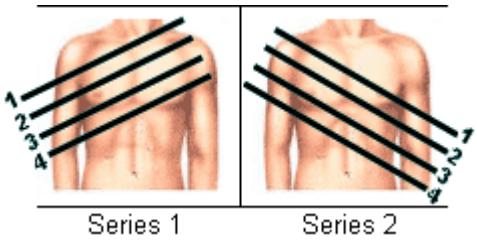
Using the linking feature, a user cannot go beyond the scope of the master. This might be obvious if the body parts are totally different like in the CHEST-ABDOMEN-PELVIS example, but sometimes they are they same, but do not start at exactly the same location. In that case you may only miss a few slices.



Warning: Linking of oblique series

iSite allows users to link oblique series. The goal is to provide users with the ability to link oblique series that are more or less in the same orientation. However, iSite does not prevent users from linking Obliques that have completely different orientations.

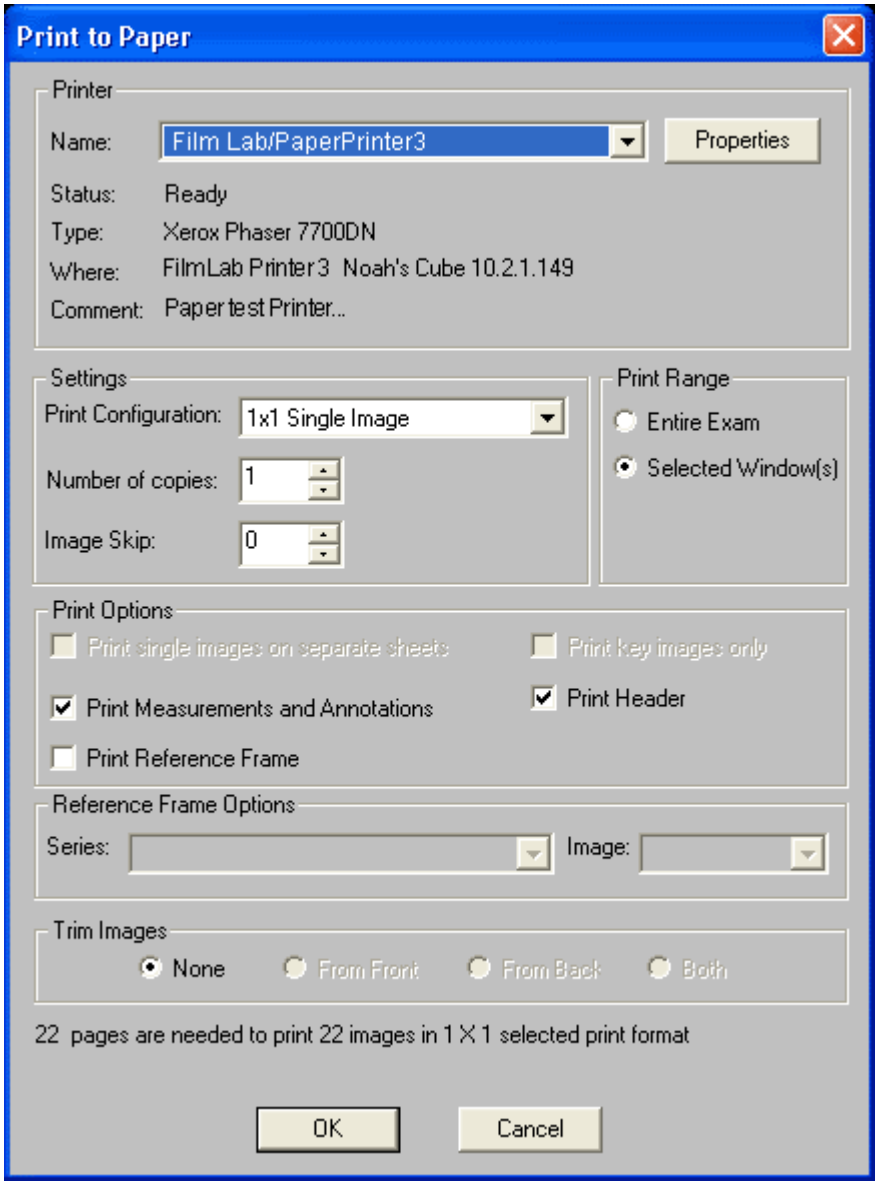
Please note, linking Obliques that are not of roughly the same orientation will lead to unexpected behavior.



- **Save Image:** This function saves the selected window contents to the Windows clipboard, from which it can be pasted into other applications or as a bitmap file.

- **Print:** The Print section of the pop-up menu has two sub-sections. Print to Paper and Print to DICOM each have separate dialogs.

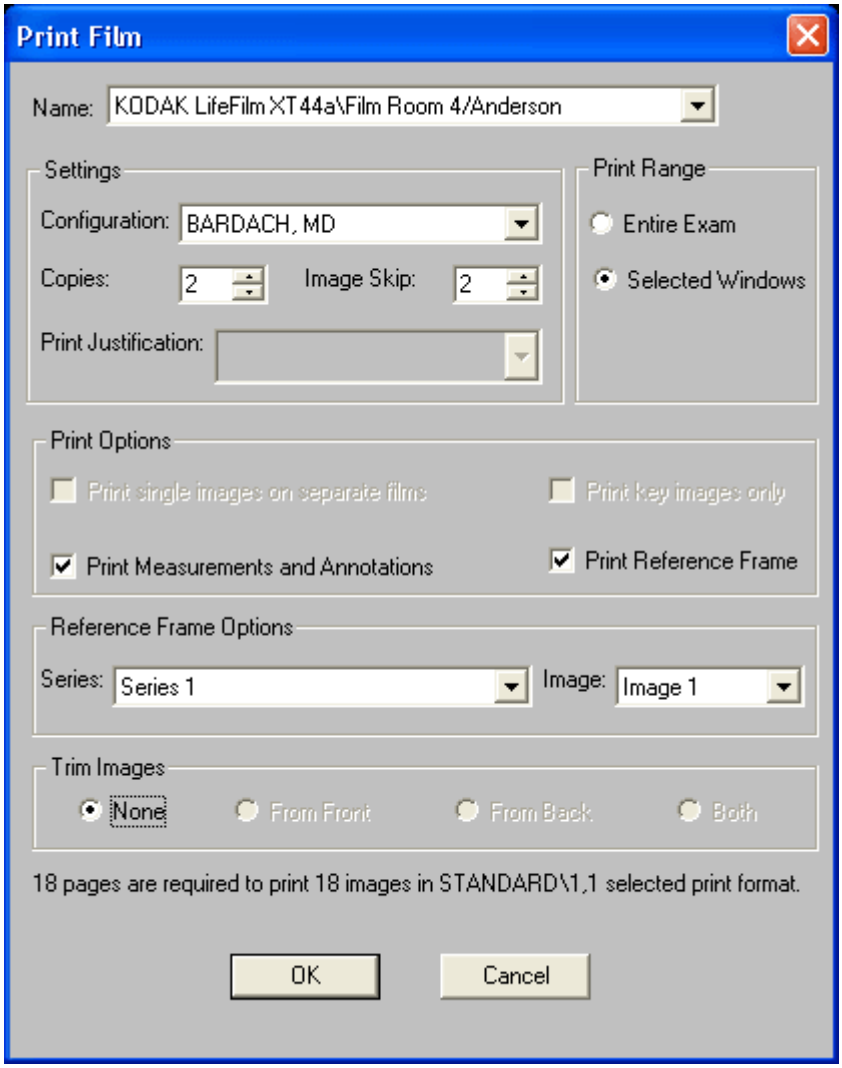
Print to Paper: This function prints the selected image to your paper printer. The following dialog will appear:



Select the desired printer from the drop-down menu. Configure your settings as desired, selecting the number of copies you wish to print, any image skip pattern (every other image, etc.), the print configuration, the print annotations option and the print key images options. For example, the "Print unstacked images on separate sheets" option allows you to print different plain film series on separate sheets, regardless of how much space is available. You can change the final output quality of the print by setting the "Optimize For" drop-down. Changing these settings will impact how long each job takes to print. Next, select the desired print-range, either the entire exam or the selected window. You can decide to trim images from the front, back or both if desired. The dialog will display the number of pages that are necessary to print the configuration you have selected. Click "OK" when you are finished and the exam or image that you chose will be printed.

If you wish to print only one image in a series (one slice of an MR exam), navigate to that slice and click the space bar to mark that image as a "Key Image". Right-click the series and select "Print to paper" from the pop-up menu. The dialog seen above will appear. Check the "Print key images only" checkbox (grayed out in the image above) and then click "OK". Only the key images will be printed.

Print to DICOM: This function prints the selected image to your DICOM printer. The following dialog will appear:



Select the desired printer from the drop-down menu. Configure your settings as desired, selecting the print configuration, the number of copies you wish to print, any image skip pattern (every other image, etc.), the desired print justification (if applicable), the print range, the print measurements and annotations option and the "Print key images only" option. For example, the "Print single images on separate sheets" option allows you to print different plain film series on separate sheets, regardless of how much space is available. Next, select the desired print-range, either the entire exam or the selected window. You can decide to trim images from the front, back or both if desired. The dialog will display the number of pages that are

necessary to print the configuration you have selected. Click "OK" when you are finished and the exam or image that you chose will be printed.

If you wish to print only one image in a series (one slice of an MR exam), navigate to that slice and click the space bar to mark that image as a "Key Image." Right-click the series and select "Print to DICOM" from the pop-up menu. The dialog seen above will appear. Check the "Print key images only" checkbox (grayed out in the image above) and then click "OK". Only the Key Images will be printed.

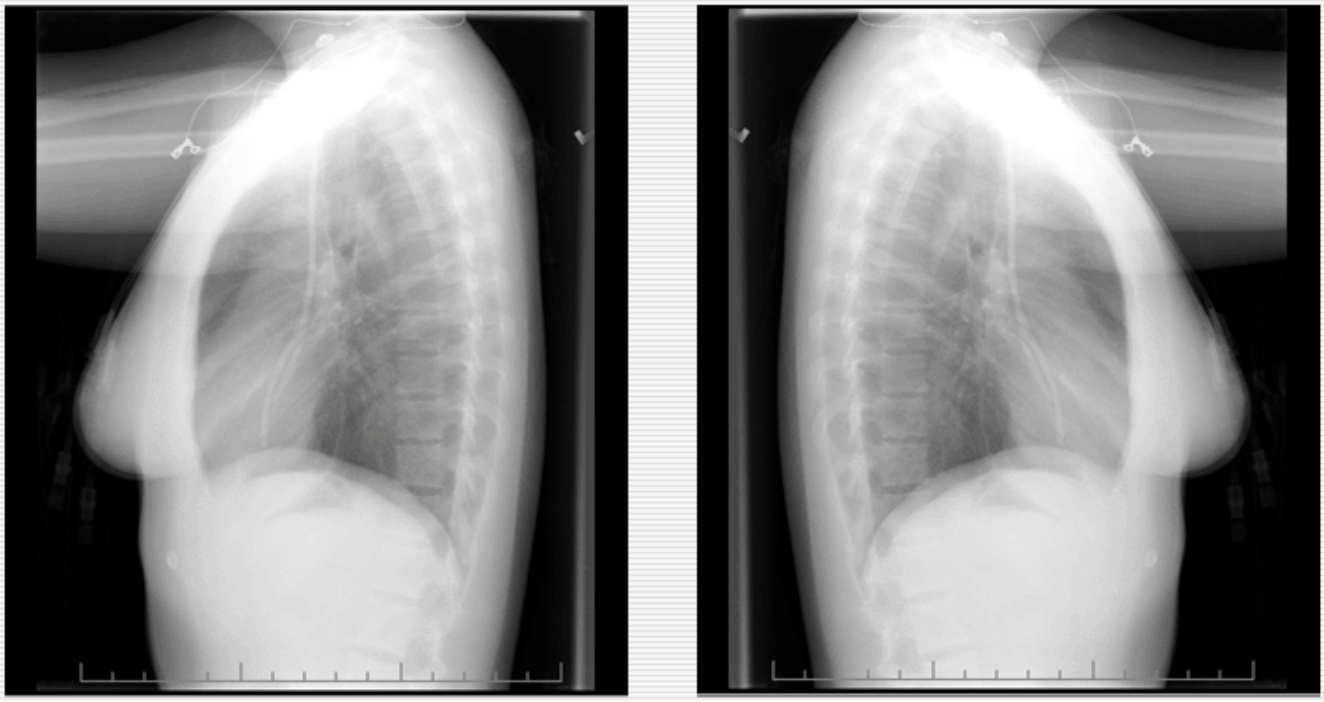
- **Play Cine Loop (series only):** This feature allows you to play a continuous loop of an image series. For example, if a series has 30 slices, they will be played sequentially from 1 to 30 and will repeat endlessly. The loop can be stopped by clicking on the series. You can change the direction of the loops (from ascending to descending or vice versa) by moving the mouse towards and away from you after clicking or by clicking the arrow keys. The Cine Loop will accelerate or decelerate depending on how far the mouse is moved forward or backward after the mouse-wheel is clicked.

  The FPS (Frames per Second) rate is displayed in the lower right-hand corner. To increase or decrease the FPS rate, hold down the wheel button and drag the mouse towards or away from you. The maximum FPS rate is 45 and the minimum is 1. The default playback rate of the Cine Loop, between 1 and 45 frames per second, is often sent from the modality as a DICOM tag. A default speed for when this information is not sent can be set in the iSite Preferences. To change the playback rate for a specific series on the fly (without changing the iSite Preferences), click the " + " or " - " buttons. Each click of those buttons will raise or lower the playback rate 1 frame per second.

  For modalities such as XA, US, PET and NucMed, iSite Radiology will detect multi-frame series and will automatically engage the "Play Cine Loop" when the series is displayed in an expanded window. XA images will have additional screen overlays added to them consisting of the primary and secondary positioner angles. These will be displayed as "LAO: __, CAUD: __".

  There are several key-commands that can be initiated while a cine loop is playing. Cine Loop can also be initiated by hitting the "C" key. Hitting the "C" key will toggle the feature on and off. In an expanded window, F7 will allow you to view the previous rack series in the exam while continuing to Cine Loop. F8 will show you the next series. Right-clicking the image will stop the Cine Loop.

- **Flip:** This function allows you to flip the selected image horizontally (around the y-axis) or vertically (around the x-axis). **:** This function allows you to flip the selected image horizontally (around the y-axis) or vertically (around the x-axis).

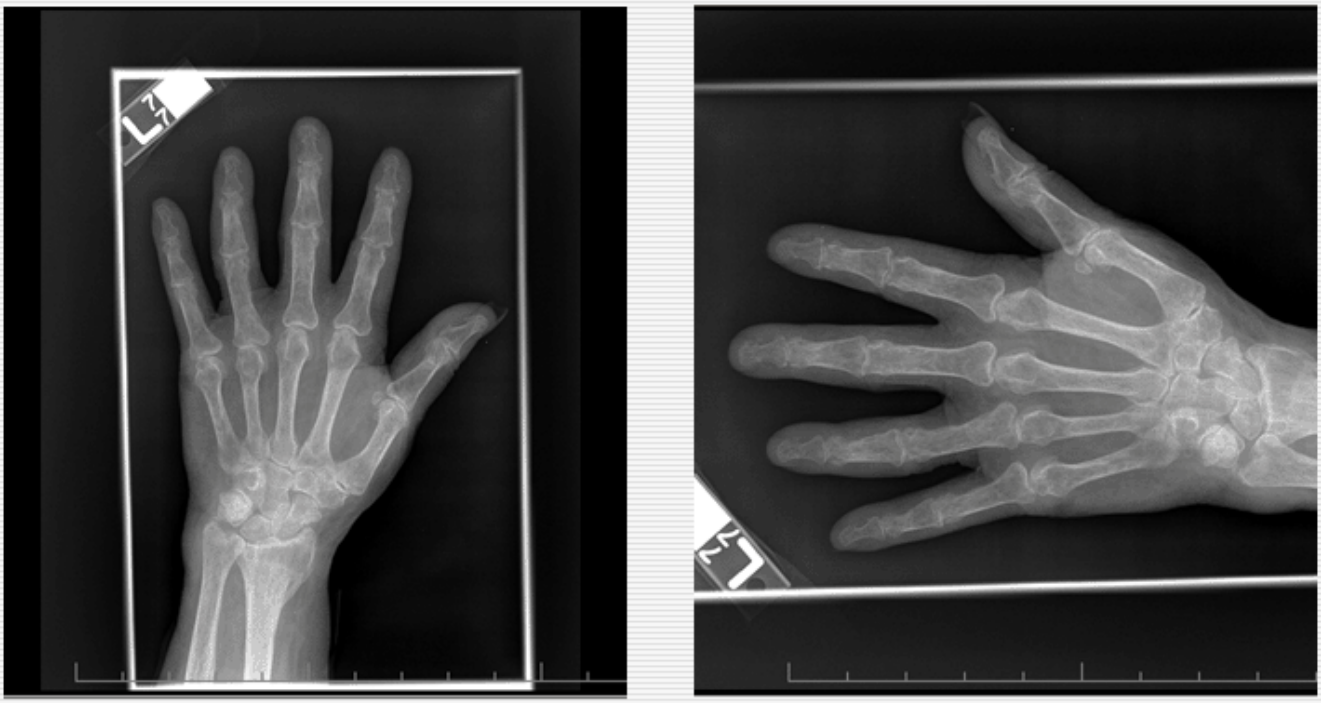


Flip Horizontally

Flip Vertically

- **Rotate:** This function allows you to rotate the selected image or series in 90-degree clockwise or counter-clockwise increments.

Rotate 90 Degrees Clockwise

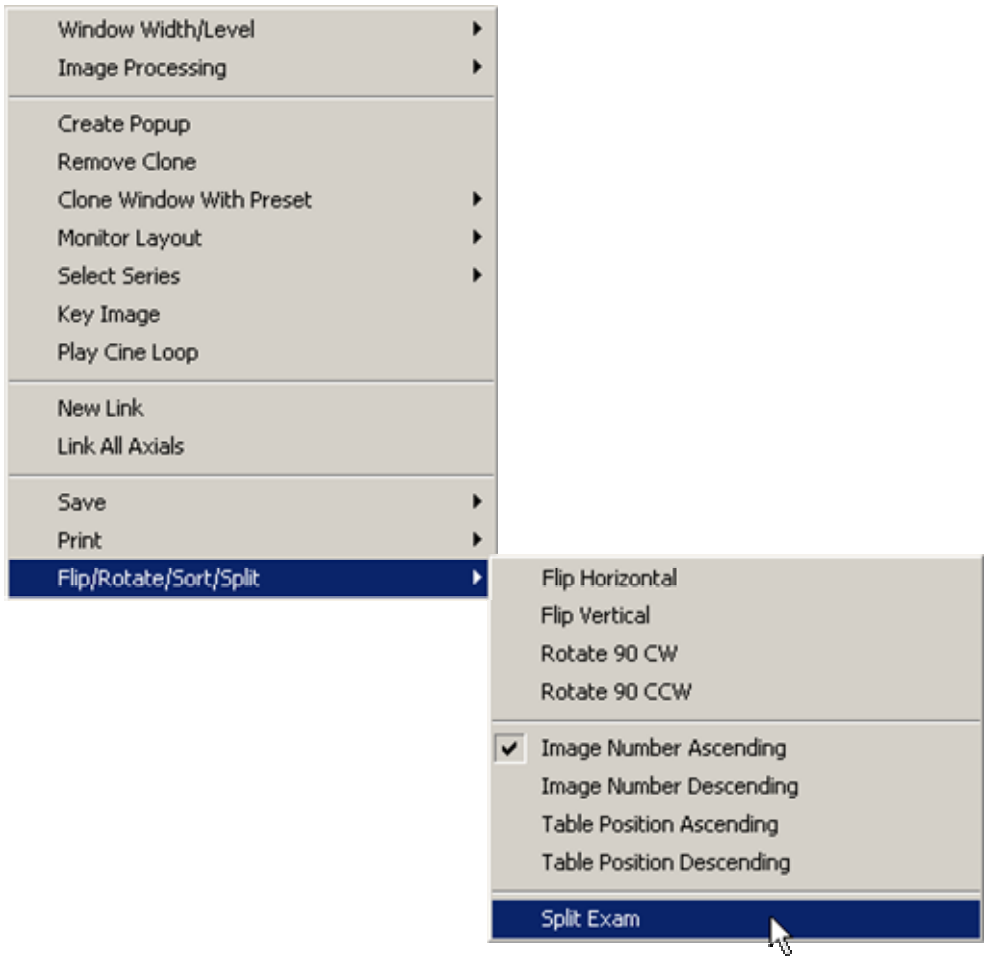


Rotate 90 Degrees Counter-Clockwise

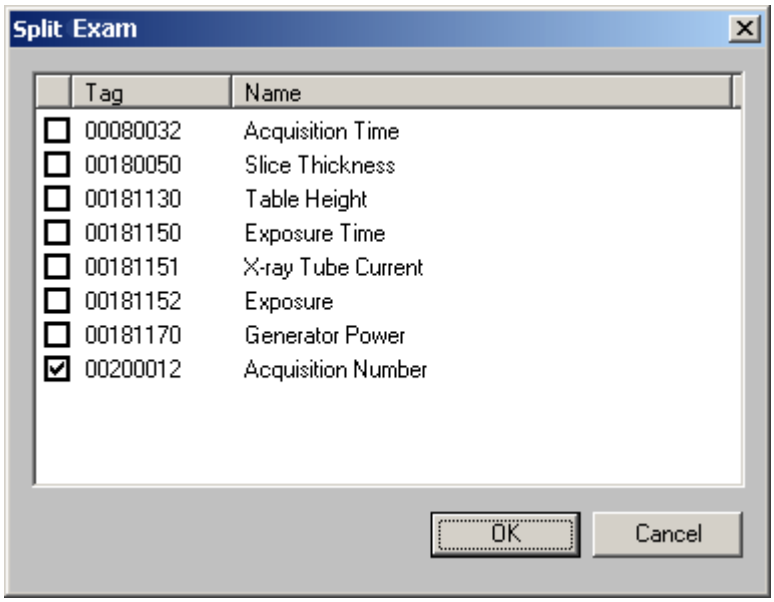
- **Sort (series only):** This feature has four options that allow you to reorder the exam in the Diagnostic Rack according to your sorting preferences: Table Position Ascending, Table Position Descending, Image Number Ascending and Image Number Descending.

  In some cases, the Sort Menu will be disabled. If the image is a multi-frame image, if not all the images have the sort tag in their DICOM or if all of the images have the same value for the sort tag, the Sort option will be unavailable.

- **Split Exam:** This feature allows you to split a series according to specific DICOM tags. This should not be attempted if you are unsure of what to do. The feature is available for stacked images, with the exception of multi-frame stacked windows. Please note, scout images and clones cannot be split. To split the exam, right-click and select the Flip/Rotate/Sort/Split menu, then choose "Split Exam" from the sub-menu, as seen below.



- The following dialog or a similar one will be displayed.



Check the DICOM tags that you wish to use for splitting the series and click "OK". The tags that are available in this dialog depend on the tags associated with the type of series you have selected. At a minimum, the series will have a DICOM group 0008 tag or higher and must contain unique attributes greater than 2 and less than 10. If there are no attributes available for splitting or if the split criteria are not met, a dialog will be displayed stating that "The exam cannot be split."

When you finish, the original series will be broken into different split series, according to the split attributes. This is not a permanent change to the exam, but rather a type of display. If you wish to preserve the split for later viewing, you must save a presentation state.

- **Matching Series Rules:** Users with the ISTHPSTD security code can configure Rules used to match specific series or images within a Hanging Protocol.

  By default, series/images are sorted in the rack based on the DICOM Source system configuration settings (by acquisition time, alphabetically, etc). Sometimes, however, this default sort order does not fit the radiologist's needs. For example, a radiologist might always want CR PA Chests to be displayed as the first image in the Rack.

  The technologist or radiologist could sort the series or images manually and create a Presentation State every time. However, if a user always wants a certain type of exam to be displayed a certain way, it is inefficient to repeatedly create Presentation States just for the purpose of sort order.

By creating a Hanging Protocol using Series Matching Rules, the relevant series/images can be sorted automatically without having to create Presentations States.

Use of the Matching Series Rules feature is described at length in the Hanging Protocols section of the iSite Radiology Canvas Page Chapter.

The sections below discuss how users with the ISTHPSTD security code can create Series Matching Rules that will be available for other iSite Radiology users.

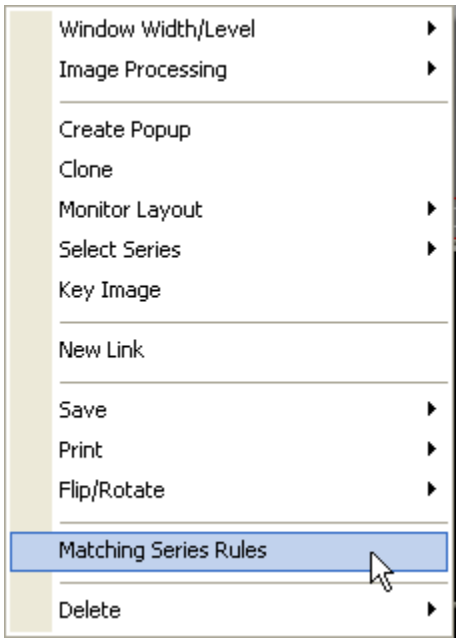
Getting Started with Series Matching Rules: The first step in creating a library of Rules is to talk with your iSite Radiology users to determine which series and images require Matching Rules.

The next step is to figure out which modalities in your facility are creating these types of series and images. For example, if a Radiologist asks for a Matching Rule for CR Femur AP, than the Rule must be configured for all modalities which are sending CR Femur AP images.

Please note, only one Rule should be created for each type of series or image.

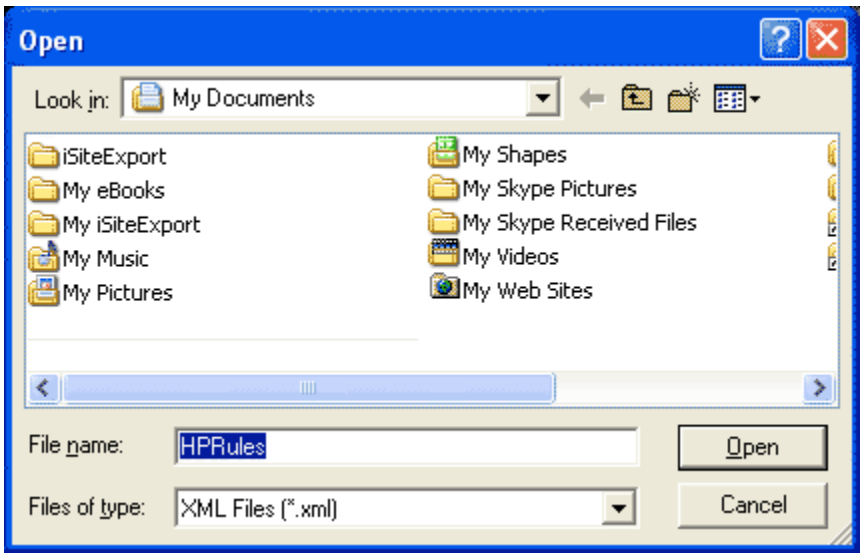
Configuring the Matching Rules: Below is an example of a Matching Rule for CR Femur AP.

- To create the Rule, right-click the series or image in question and select "Matching Series Rules," as seen below.

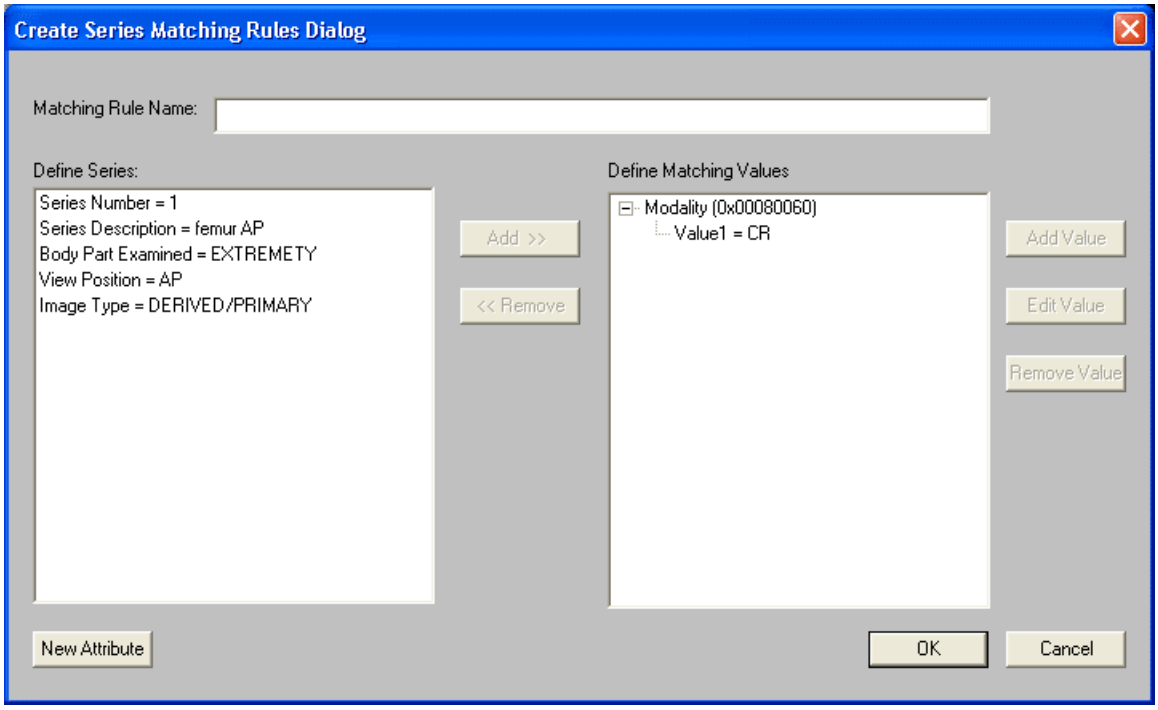


- The following dialog will appear:

If there are existing Matching Series Rules that you would like to import to the system, click the "Import" button. Select the .XML file from the ensuing dialog, seen below, and click "OK."

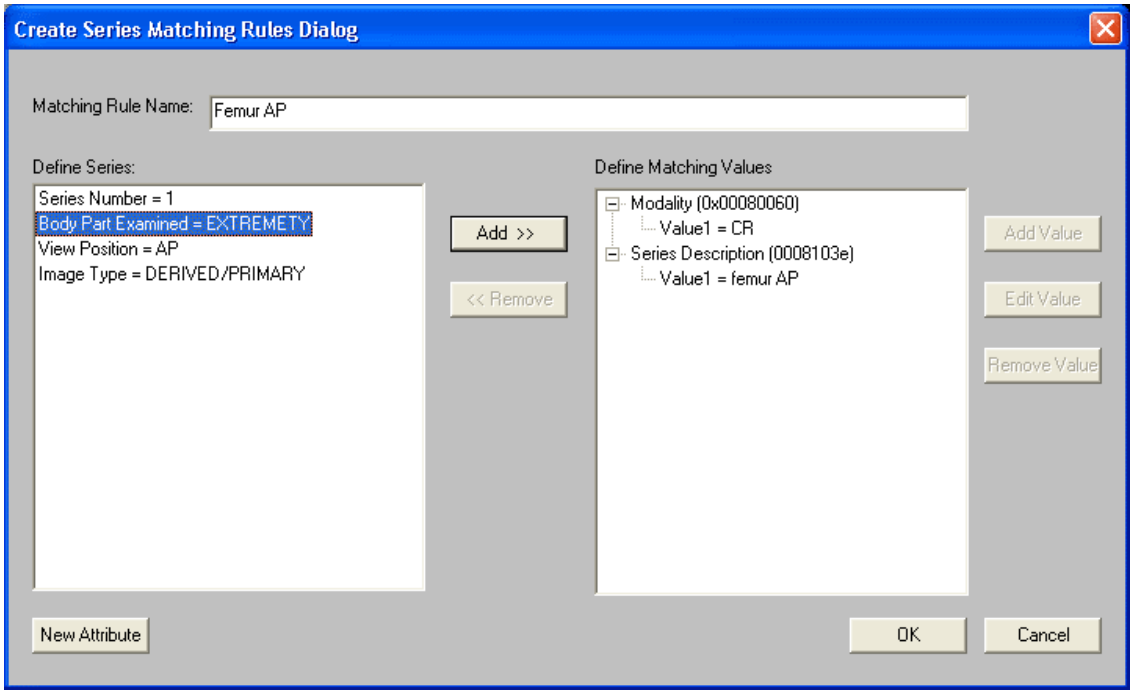


To begin configuring the new Matching Series Rule, click the "Add Rule" button. The following dialog will be displayed:



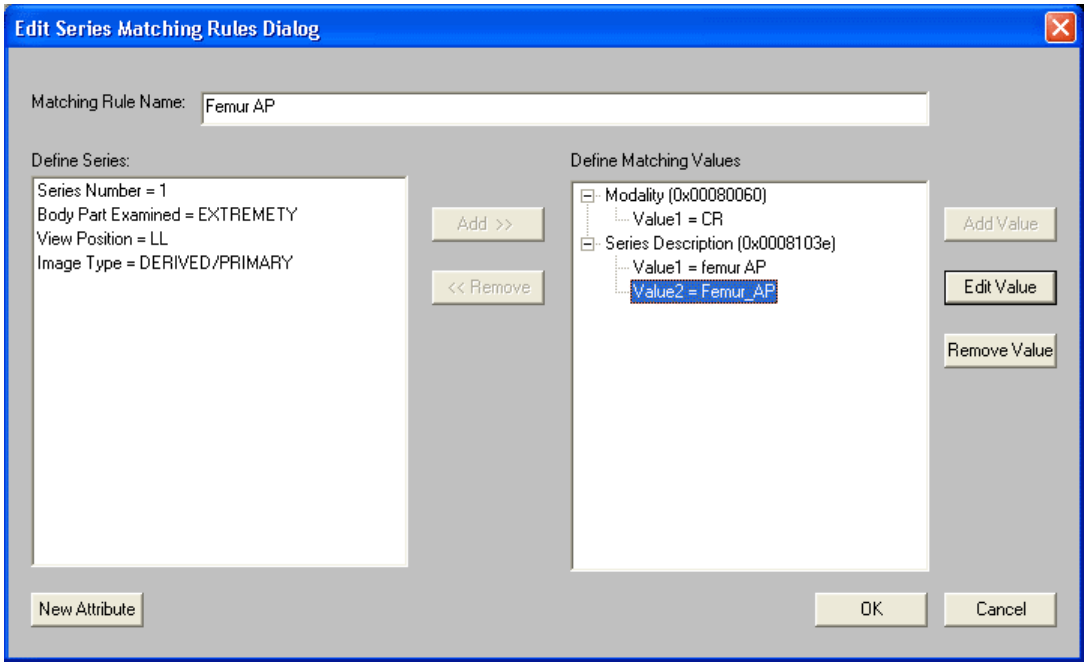
Enter a specific name for the new Rule, such as Femur AP, one that will recognizable by the Radiologists who will be creating Hanging Protocols using the Rule. Since the Rules are based on matching DICOM Tag Values, the next step is to select the DICOM Tags that will be used as common identifiers for the Rule. To add a DICOM Tag Value, highlight an item from the Define Series area and click the "Add >>" button to add it to the "Define Matching Values area. Up to 50 different DICOM Tag Values can be added.

As seen below, Series Description, in addition to the default Matching Tag Value for modality, has been selected as a matching value.



In order for this Rule to work for the same image type coming from other modalities, you must verify that the selected Tag Value (in this case Series Description), is consistent. If two modalities use different description with the same meaning (ie., "femur AP" and "Femur_AP"), both Tag Values must be included.

To do this, find a matching series from the second machine sending Femur AP images, right-click the image in question, select "Matching Series Rules" and edit the existing "Femur AP" rule, seen above. When you arrive at the "Edit Series Matching Rules Dialog," seen below, add the second Tag Value.



The criteria described by the "Define Matching Values" window is inclusive. In the example above, the series must be a CR AND have the description "femur AP" OR the description "Femur_AP." Other options available from this dialog are as follows:

- **New Attribute:** Clicking this button opens a dialog which allows you to add a DICOM tag that is not shown by default.
- **Add >> / << Remove:** These buttons allow you to add or remove a DICOM Tag and its values to/from the selected Tags in the Define Matching Values window.
- **Add/Edit/Remove Value:** These buttons allow you to add, edit or remove a Tag Value that has been added to the Define Matching Values window.

Click "OK" when finished.

Matching Series Rules can also be exported from your system for use in a different organization or environment. Click the "Export" button to save an .XML file with your Rules that is portable and be imported to another iSite system.

- **MPR:** MPR or "Multi-Planar-Reconstruction" is a powerful feature that allows you to create a reconstructed series either in the same or using a different orientation on the fly. Currently iSite supports the creation of reconstructed series in the Axial, Coronal or Sagittal orientation. Reconstructed series can also be created with "thicker slices" or "slabs". Using this option you will be able to specify the slab thickness, the spacing, the gap and the applied algorithm (Average Intensity, Maximum Intensity (MIP), and Minimum Intensity).

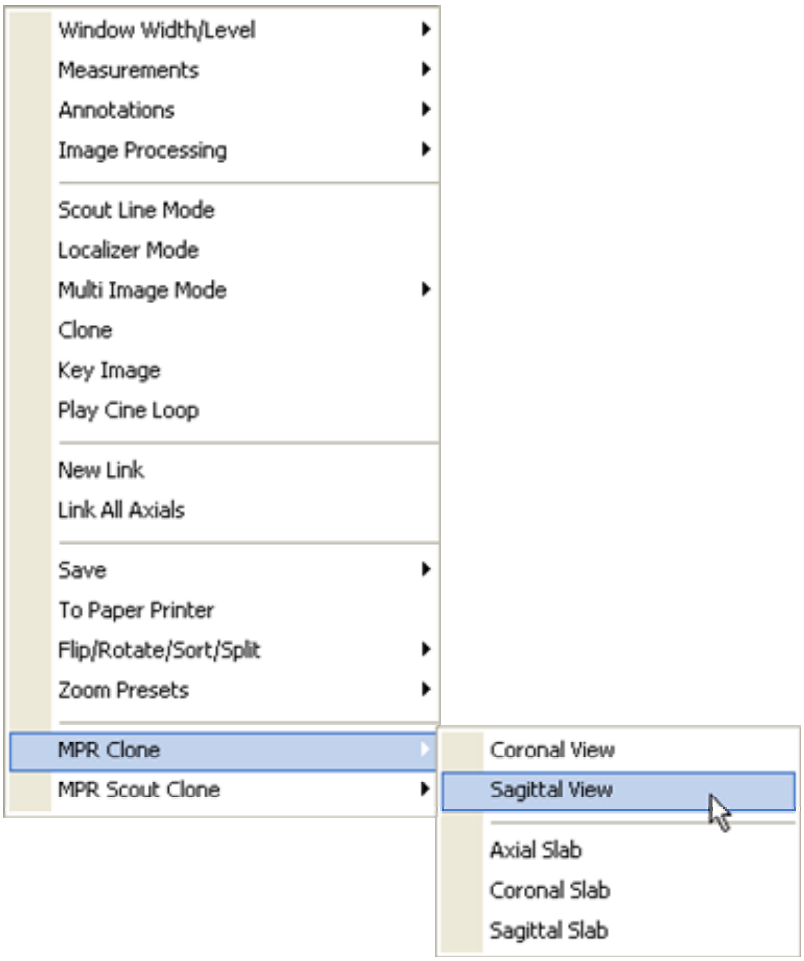
Before proceeding, please note that if iSite is running in a lossy-compressed mode, then the MPR images generated will be based on lossy data. These MPR images will not be full fidelity and should never be used for diagnostic reading. Furthermore, if new images arrive for a study after an MPR has been generated from images or series in that study, the MPR will NOT be automatically updated.

There are a number of conditions that a study must meet in order for iSite's MPR feature to be available for a given series:

- The series must have equidistant spacing between slices.
- The series must not contain images at the same slice location (eg. multi-phase series)
- All images in the series must have row and column spacing information in the DICOM
- The image series must have at least one level of transform.
- All images in a stack must be of the same resolution.
- All images in the stack must be grayscale.
- The series must be in the shape of a rectangular parallelpiped or cube in any orientation (axial, sagital, coronal or oblique).
- The machine's memory and Maximum Cache Size must be sufficiently large to handle the series. The latter can be set in the Local Exam Cache settings of the Machine Preferences.
- The Maximum Cache Size must be set above the minimum of 256MB.
- The system must not be running either Windows 95 or Windows NT4

If the selected series does not meet any of the conditions described above, iSite will display an error message like the one shown below:

To access the MPR feature, right-click the desired series and select an option from the MPR sub-menu, as seen below.



The available MPR Clone options are Sagittal View, Coronal View and Axial View (not pictured).

- Axial View - visible for all non-Axial stacks. Selecting this item will initiate the creation of an Axial MPR Clone for the given stack series.
- Sagittal View - visible for all non-Sagittal stacks. Selecting this item will initiate the creation of an Sagittal MPR Clone for the given stack series
- Coronal View - visible for all non-Coronal stacks. Selecting this item will initiate the creation of an Coronal MPR Clone for the given stack series

The MPR feature also provides 3 slab configurations, discussed below. The clone options that are displayed depend on the view of the current exam. For example, an axial exam will display the Sagittal Clone and Coronal Clone options.

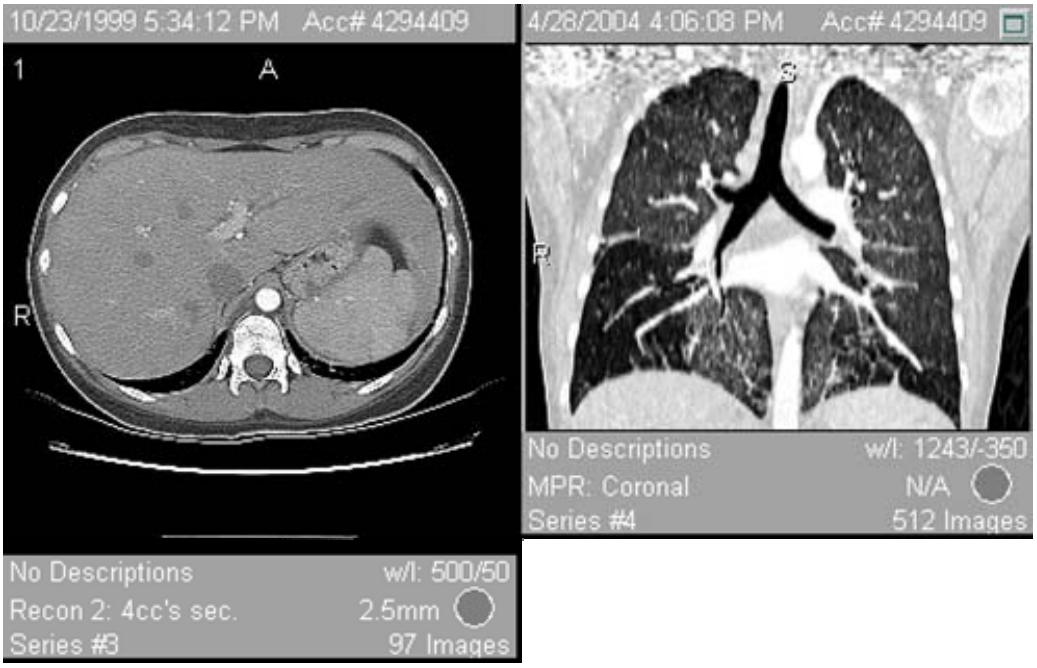
- Axial Slab - selecting this item will open the MPR Slab options dialog with the default parameters for the creation of an Axial Slab MPR.
- Sagittal Slab - selecting this item will open the MPR Slab options dialog with the default parameters for the creation of a Sagittal Slab MPR.

- Coronal Slab - selecting this item will open the MPR Slab options dialog with the default parameters for the creation of a Coronal Slab MPR.

MPR Series will have the same Series Number as their volume source series.

When an MPR window is created, it will be initialized to display the image in the middle of the stack. For example, if an MPR reconstruction has 512 Images, when the series is created, image 257 will be displayed. **MPR Series will have the same Series Number as their volume source series.** If all the source volume stack series images have the same WW/WL values, then the MPR images will be initialized with these WW/WL values. If all the source volume stack series images do not have the same WW/WL values, the MPR images will use a Histogram Calculation to compute WW/WL values.

Below are examples of a typical Axial CT series and the resulting clone, titled "MPR: Coronal."



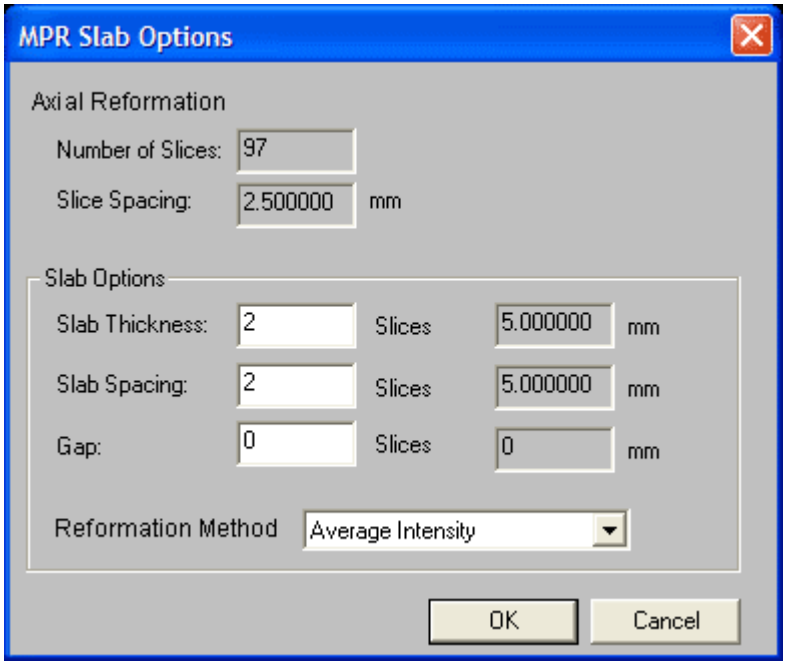
The new series window, shown at the right, is fully enabled and will support all normal iSite series functionality, with the exception of the Calibration and Full Fidelity features. In addition, Series Matching is not supported in MPR windows.

To remove an MPR clone, right-click the image and select the "Remove Clone" option.

MPR Scout Clones can also be created. These reconstructions load a lot faster and provide a navigational scout or reference series in the desired orientation at lower resolution and are not meant for diagnostic interpretation. Clones are

available for all grayscale Axial, Sagittal or Coronal Stacks that are not themselves MPR Clones and that contain at least 3 images and each of which has at least one level of transform. The specified MPR images will generated based on sub-sampled data. MPR Scouts are navigation tools. Selecting this item will reveal the MPR Submenu.

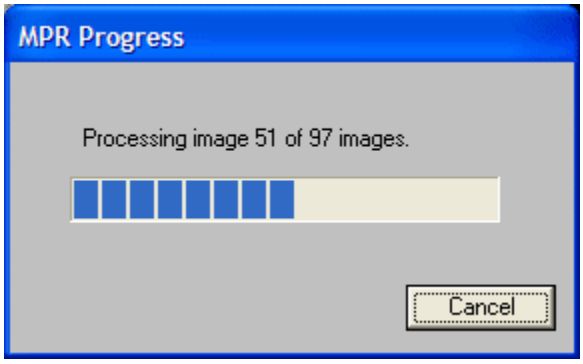
The MPR slab options (Axial Slab, Coronal Slab and Sagittal Slab) provide detailed reconstruction options, as seen below:



The dialog list the type of reconstruction at the top (axial, for this example), followed by the number of slices in the series and the spacing between slices. These fields are not user-configurable. The Slab Options section allows you to set the thickness of the slab as well as the spacing and gap between slices. The millimeter values are a factor of the original series and cannot be changed. The Reformation Method drop-down menu provides three options: Average Intensity, Maximum Intensity (MIP), and Minimum Intensity.

The reconstruction methods used to generate MPR Slabs are grayscale methods which emphasize different tissues for CT, MR and PET volumes. MIP (Maximum Intensity Projection) emphasizes the tissue with the highest pixel values such as bone and vasculature (angiography, aneurysms, plaques, stenoses and other vascular anomalies) and improves visualization of nodular lesions. MinIP (Minimum Intensity Projection) emphasizes tissue with the lowest pixel values such as air-filled structures. This method is best for visualization of tissue attenuation and pulmonary tissues. AveIP (Average Intensity Projection) displays tissue with average pixel values.

Upon clicking the "OK" button, a progress dialog will appear (shown below) and the new Clone will be placed next to the original series.



If you wish to abandon creating the clone, click the "Cancel" button.

MPR Key Images can be saved as reconstructed images in Presentation States on the iSite Server as valid DICOM. These MPR Key Images will be stored in a new series as part of the exam. The stored images and their series will be assigned new UIDs. All changes that the user made to the MPR Key Images will be saved in user Presentation States (i.e. measurements, annotations, alterations to WW/WL values, etc.).

The MPR Key Images saved to iSite Server will become part of the Original DICOM Presentation State. However, all changes that the user made to the MPR Key Images (i.e. measurements, annotations, alterations to WW/WL values, etc.) will not be saved in the Original DICOM Presentation State.

If user uses iExport to DICOM send the study over to another DICOM device, iSite will also send the MPR Key Images as well.

- **Delete:**

This feature allows authorized users to permanently removed images from the iSite system. Images may need to be to be deleted for any number of reasons, some of which are listed below:

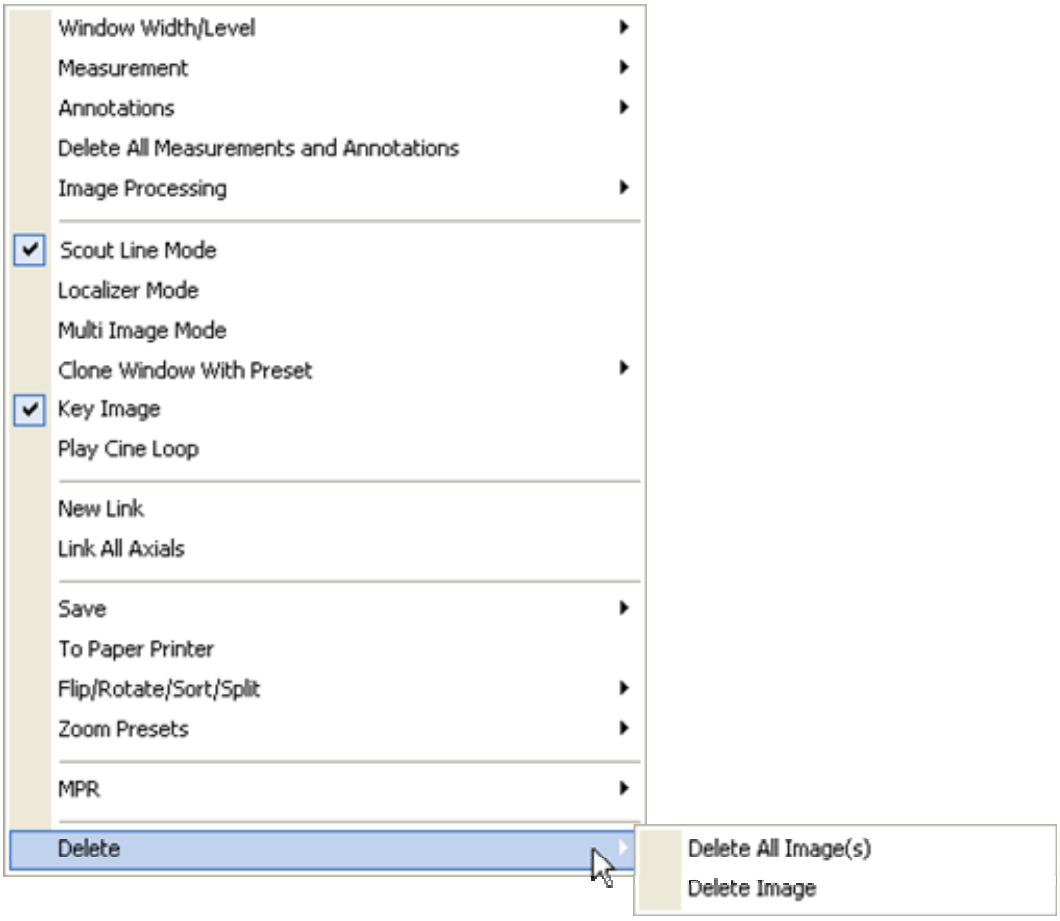
1) Technologists sometimes send image(s) to iSite accidentally using the wrong patient or exam demographics or with a SUID that was already in use. In those cases where the SUID is already in use, the new images are automatically merged with an existing study. These duplicate images should be removed.

2) Sometimes an image, series or part of a series needs to be rescanned due to imaging or patient problems such as mechanical problems, overexposure, underexposure, patient movement, or incorrect patient position, etc.

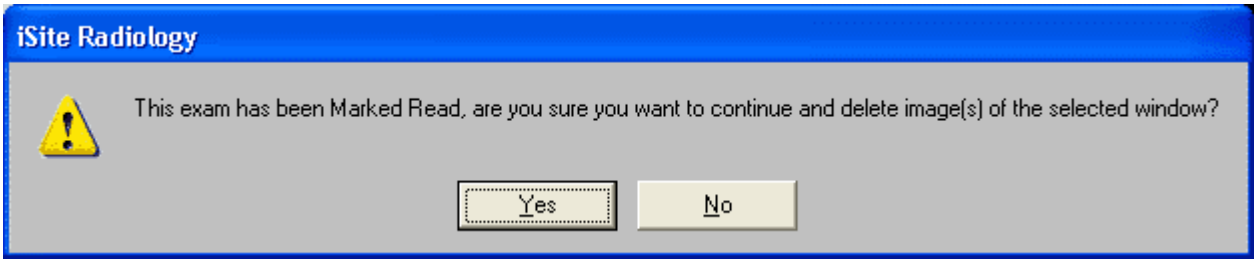
3) Sometimes test images are created at the beginning of a procedure and accidentally end up in iSite.

Warning: Once images have been deleted, they can be recovered. However, all presentation states, measurements and annotations will be lost. In addition, please note that if an image has been deleted after receiving a new Study UID, the image shall not be recoverable.

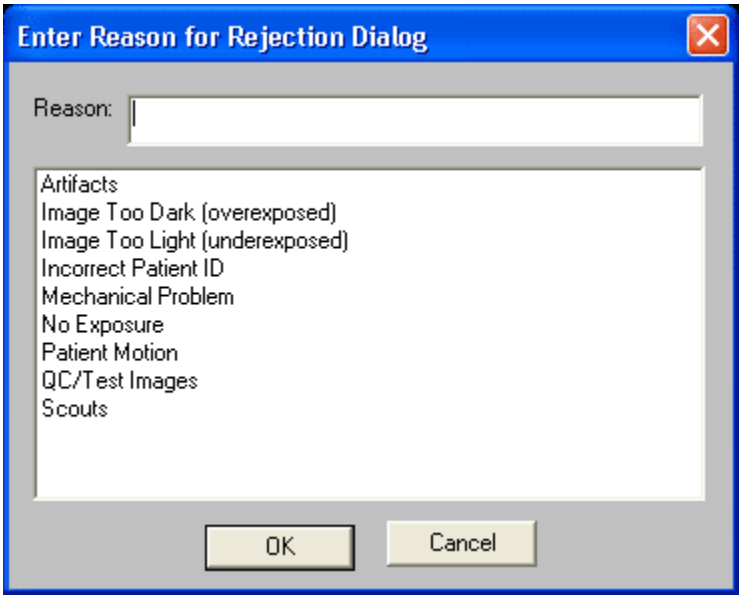
The two deletion options allow users with the correct permissions to delete images from exams, as seen below.



The option "Delete All Image(s)" removes every image from a selected series, whereas the option "Delete Image" only removes the current image. If the exam being viewed has already been marked "Read", a confirmation dialog will appear, as seen below:


iSite Radiology
This exam has been Marked Read, are you sure you want to continue and delete image(s) of the selected window?
Yes
No

If you answer "Yes", or if the exam has not yet been marked "Read", a "Reason for Rejection" dialog will appear, as seen below:



Either enter in a reason in the dialog or select one of the pre-canned reasons, then click "OK". The image or images will be deleted.

When an image(s) is deleted, iSite keeps a record of the following information:

- iSite User ID
- Deletion Date
- Deletion Time
- Modality
- Accession #
- MRN
- Series/Image UID
- Series/Image Description/Number
- Reason for Deletion

These audits can be viewed by the iSite System Administrator in the Statistics page.

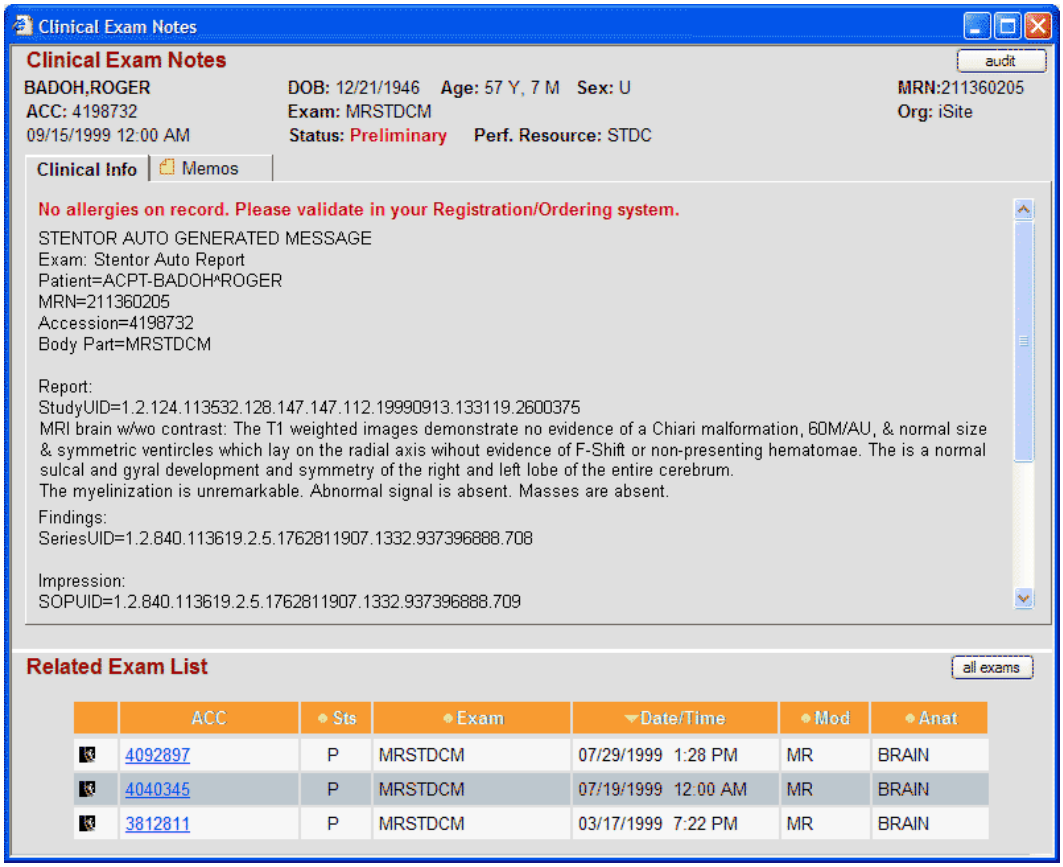
Viewing Diagnostic Reports

There are several ways to view the diagnostic report associated with an exam. From the Patient Directory, right-click on the exam listing and select the "Show Report" option. From the Reading Worklist, double-click on the Report Icon ( ).

This small button has three states, each one corresponding to the status of the Diagnostic Report in question. When the button is red ( ), the Diagnostic Report for the particular exam being viewed is available. When the button displays a sticky note ( ), there is no Diagnostic Report yet, but an Exam Memo is available. When the report button is empty ( ), iSite is unable to perfectly match a report with the exam being viewed and will provide a summary of diagnostic reports for the patient being viewed.

In the Canvas Page, there are two ways to view a report. Either right-click the exam's listing in the Navigational Timeline and choose "Show Report" from the resulting pop-up menu, or double-click the Image Metadata Area of a loaded exam. In all instances, the appropriate diagnostic report will be presented in a separate, floating window. An example of a diagnostic report is shown below.

Clinical Info:


Clinical Exam Notes
Clinical Exam Notes
audit
BADOH,ROGER
DOB: 12/21/1946 Age: 57 Y, 7 M Sex: U
MRN:211360205
ACC: 4198732
Exam: MRSTDCM
Org: iSite
09/15/1999 12:00 AM
Status: Preliminary Perf. Resource: STDC
Clinical Info
Memos
No allergies on record. Please validate in your Registration/Ordering system.
STENTOR AUTO GENERATED MESSAGE
Exam: Stentor Auto Report
Patient=ACPT-BADOH^ROGER
MRN=211360205
Accession=4198732
Body Part=MRSTDCM
Report:
StudyUID=1.2.124.113532.128.147.147.112.19990913.133119.2600375
MRI brain w/wo contrast: The T1 weighted images demonstrate no evidence of a Chiari malformation, 60M/AU, & normal size & symmetric ventircles which lay on the radial axis wihout evidence of F-Shift or non-presenting hematomae. The is a normal sulcal and gyral development and symmetry of the right and left lobe of the entire cerebrum.
The myelinization is unremarkable. Abnormal signal is absent. Masses are absent.
Findings:
SeriesUID=1.2.840.113619.2.5.1762811907.1332.937396888.708
Impression:
SOPUID=1.2.840.113619.2.5.1762811907.1332.937396888.709
Related Exam List
all exams
ACC
Sts
Exam
Date/Time
Mod
Anat
4092897 P MRSTDCM 07/29/1999 1:28 PM MR BRAIN
4040345 P MRSTDCM 07/19/1999 12:00 AM MR BRAIN
3812811 P MRSTDCM 03/17/1999 7:22 PM MR BRAIN

The type of information provided in the report will vary from institution to institution. However, certain information, such as the patient's name and ID number, will always be displayed when available.

Navigate through the report using the scroll bar at right. There are several sections of information including the Report, Findings, Impression, participating radiologists' contact information, Diagnosis, History, Comments and the contact information of the Requesting and Attending Physicians.

If related exams are present on the iSite server, these will be listed below, as seen above. This list of exams is interactive. An exam's report can be viewed by clicking its accession number. If you wish to view a list of all exams belonging to the patient in question click the "all exams" button. To toggle back to a list of only related exams, click the "related exams" button.

Exam Memos:

To view any notes associated with this exam, click the "Memos" tab at the upper left-hand corner, next to the Clinical Info Tab.

Use the buttons in the upper right-hand corner to delete, audit, or add memos. To add a new memo, click the "add" button.

To create a text memo, type the desired comments into the blank field. When you have finished, click the "save" button to upload your comments. The new memo will be displayed alongside the existing memos. Your name and a date stamp will be added automatically to the memo.

Exam Audit Trail:

To view an audit trail for the exam, click the "Audit" Button in the upper right-hand corner of the dialog. The following window will appear:

Exam Audit Trail -- Web Page Dialog
Exam Audit Trail for Accession Number: 4135625
close
05/02/2005
Time | Status | Report Status | Event | Who / Notes
2:32 PM | S | | Exam scheduled | by Interface, ADT, manually, as exam CTSTDCM / in STDC for 08/16/1999 3:36 PM
2:32 PM | I | | Exam begun | by Interface, ADT at 08/16/1999 3:36 PM
2:32 PM | C | | Exam completed | by Interface, ADT as exam CTSTDCM / in STDC at 05/02/2005 2:32 PM (Performing providers are listed at the end of the audit trail)
2:32 PM | | Preliminary | Report transcribed | by Interface, ADT
05/03/2005
Time | Status | Report Status | Event | Who / Notes
7:10 PM | P | Preliminary | Image viewed | by Admin, Stentor
8:59 PM | P | Preliminary | Image viewed | by Admin, Stentor
9:01 PM | P | Preliminary | Image viewed | by Admin, Stentor
05/04/2005
Time | Status | Report Status | Event | Who / Notes
10:24 AM | P | Preliminary | Image viewed | by Admin, Stentor
12:46 PM | P | Preliminary | Image viewed | by Admin, Stentor
05/05/2005
Time | Status | Report Status | Event | Who / Notes
1:14 AM | P | Preliminary | Image viewed | by Admin, Stentor
4:52 AM | P | Preliminary | Image viewed | by Admin, Stentor
6:06 AM | P | Preliminary | Image viewed | by Admin, Stentor
1:58 PM | P | Preliminary | Image viewed | by Admin, Stentor
8:03 PM | P | Preliminary | Image viewed | by Admin, Stentor
9:07 PM | P | Preliminary | Image viewed | by Admin, Stentor
05/06/2005
http://10.2.0.175/isuite/ModalMain.asp?Title=Exam%20Audit%20Trail&scrolling=no&src=/isuite/idxrad/patientrecord/
Internet

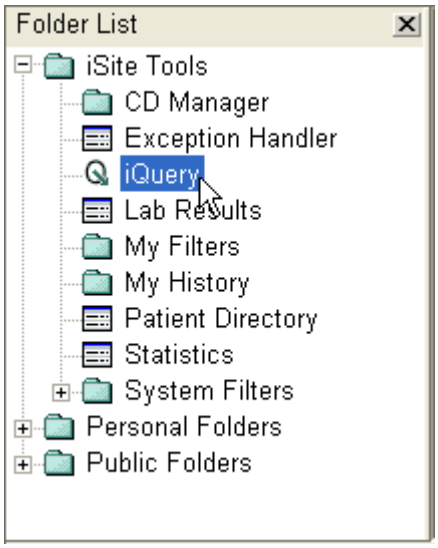
When you have finished reviewing the report, close the window by clicking the close button at upper-right.

iQuery: DICOM Study Retrieval System

iQuery is a tool that allows an authorized user to retrieve DICOM studies from your institution's digital archive and send them to the iSite Patient List. If you do not have authorization or if your institution does not have a digital archive, iQuery will not appear in the Folder List.

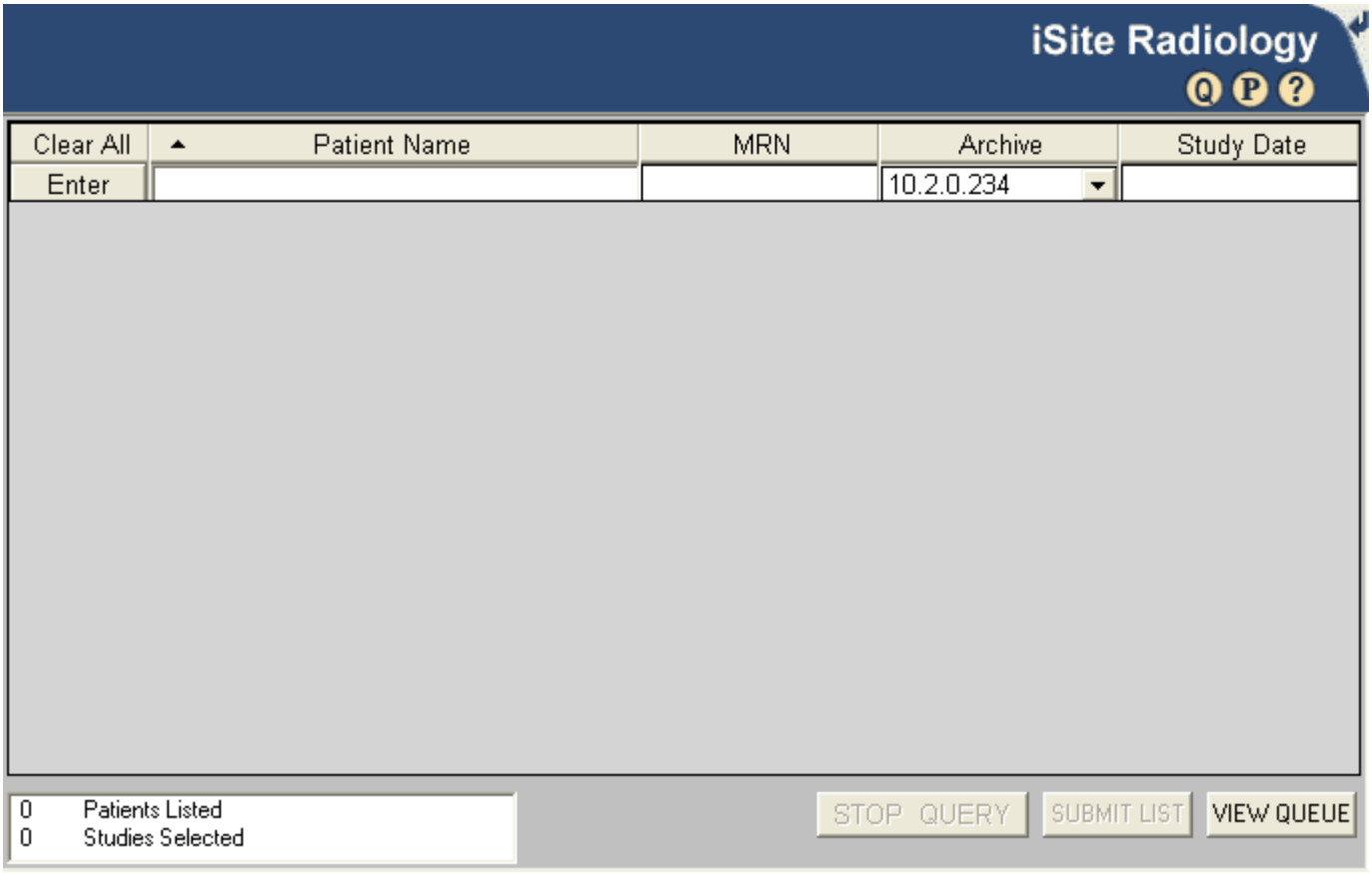
Accessing iQuery

To access iQuery, you must have appropriate authorization from your iSite System Administrator. If authorization has been granted, you will see iQuery in the Folder List. Click the iQuery listing, as seen below, to access this tool.



The iQuery Main Page

When you click the iQuery Tab the following screen will appear. This is the iQuery Main Page and it functions as the center of your activities while using iQuery. The iQuery Main Page contains the search fields in which you enter patient data that you wish to retrieve. Retrieved patient and study listings will be listed in the dialog below.

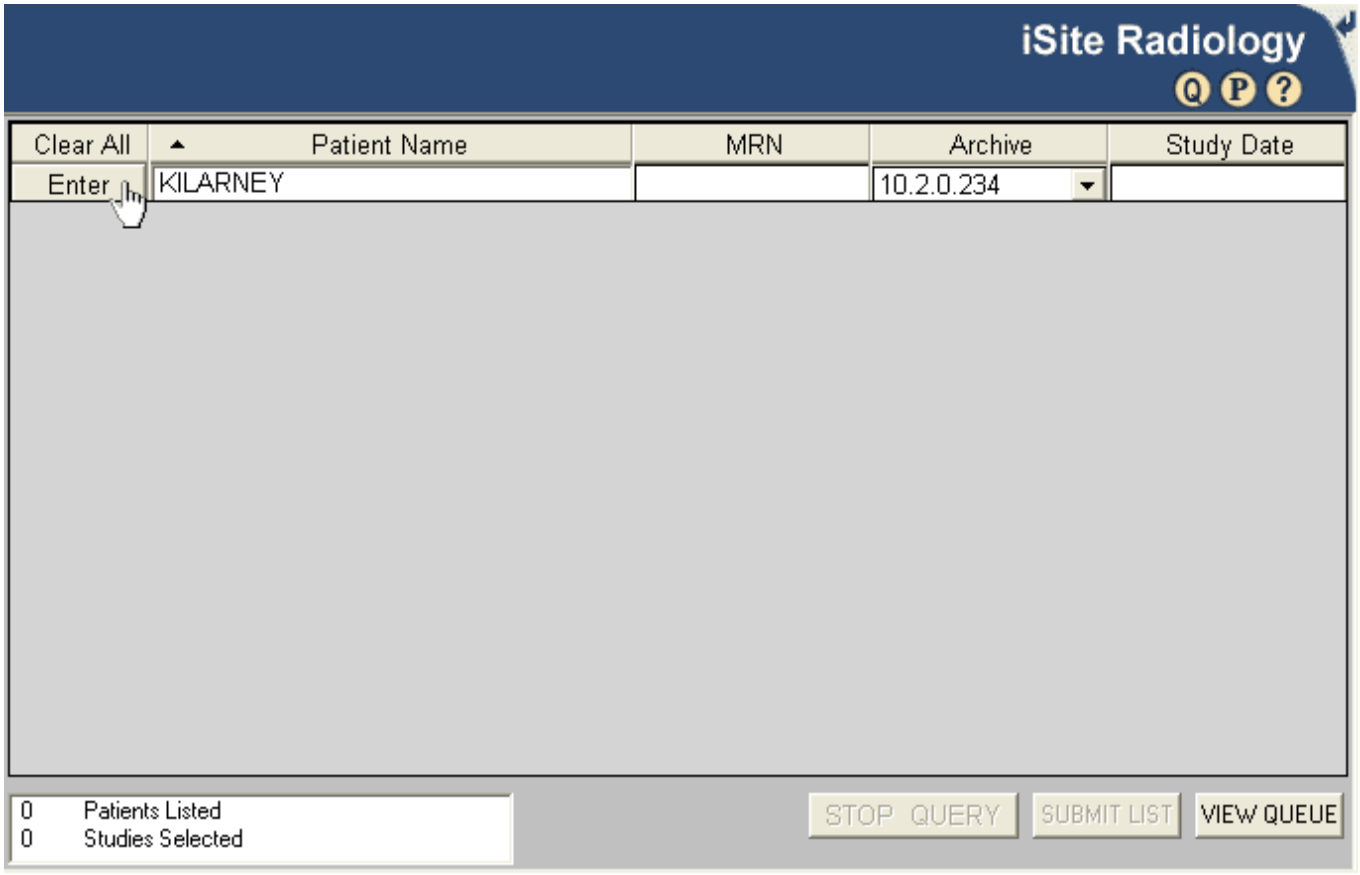


Querying for Patient Studies

To select studies to be retrieved from the digital archive, type either a Patient Name and/or a Patient ID into the search fields and click "Enter". iQuery will automatically search all available archives. However, if you wish to restrict your search to a particular archive, you can select it from the Archive pull-down menu.

You can add as many patients as you would like to the list by entering their names or ID numbers to the search fields and clicking "Enter".

Upon clicking the "Enter" button, the "Stop Query" button will be activated and a flashing red light on the button will indicate that your query is being performed. If you would like to stop the query, click the "Stop Query" button.

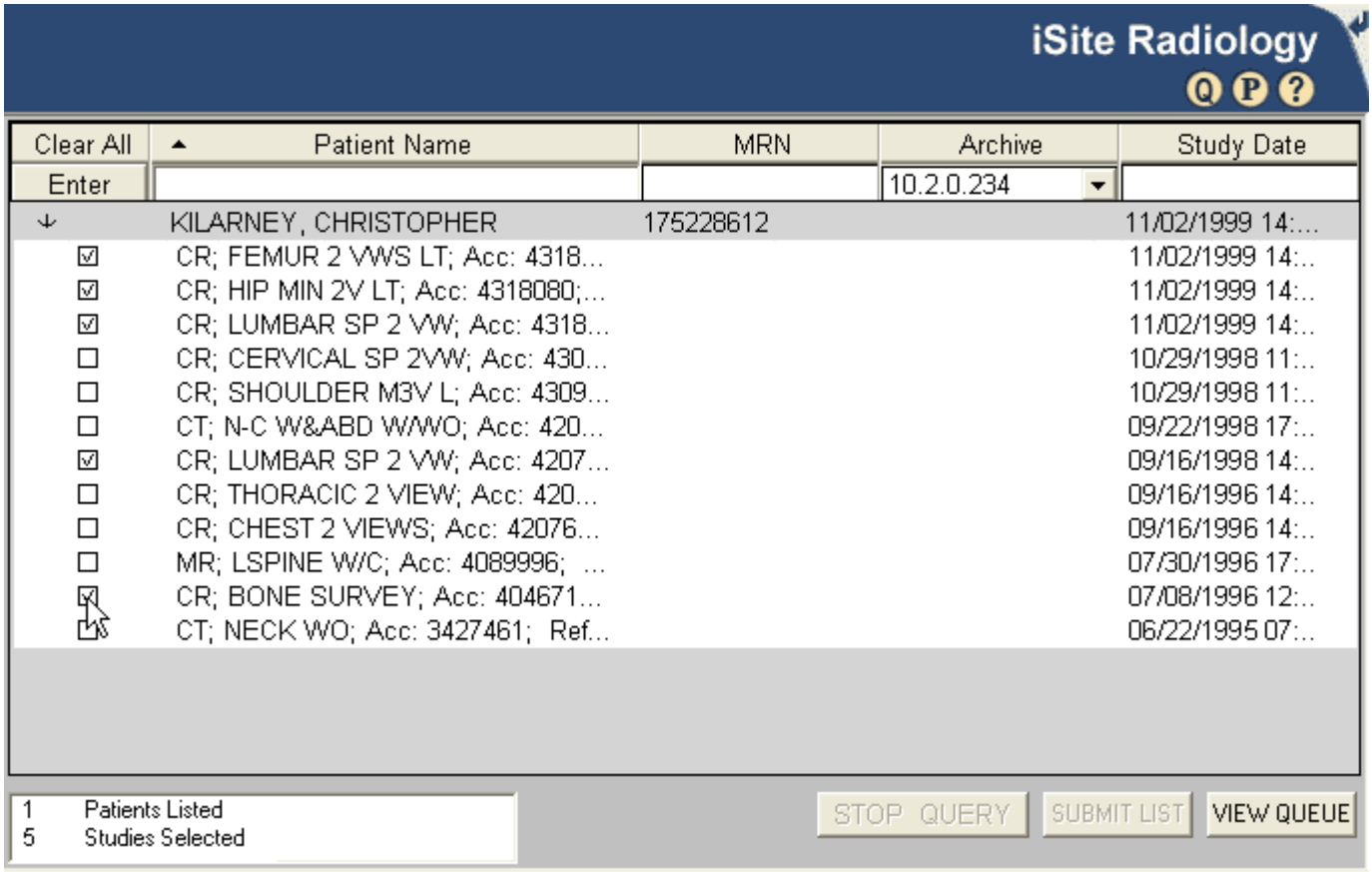


Selecting Studies for Retrieval

The patients that match your query are displayed below. If no studies match your query, you will be notified by a message in the iSite Control Strip. If more than 50 studies match your search criteria, only 50 will be displayed and you will be notified in the iSite Control Strip that you must narrow your search.

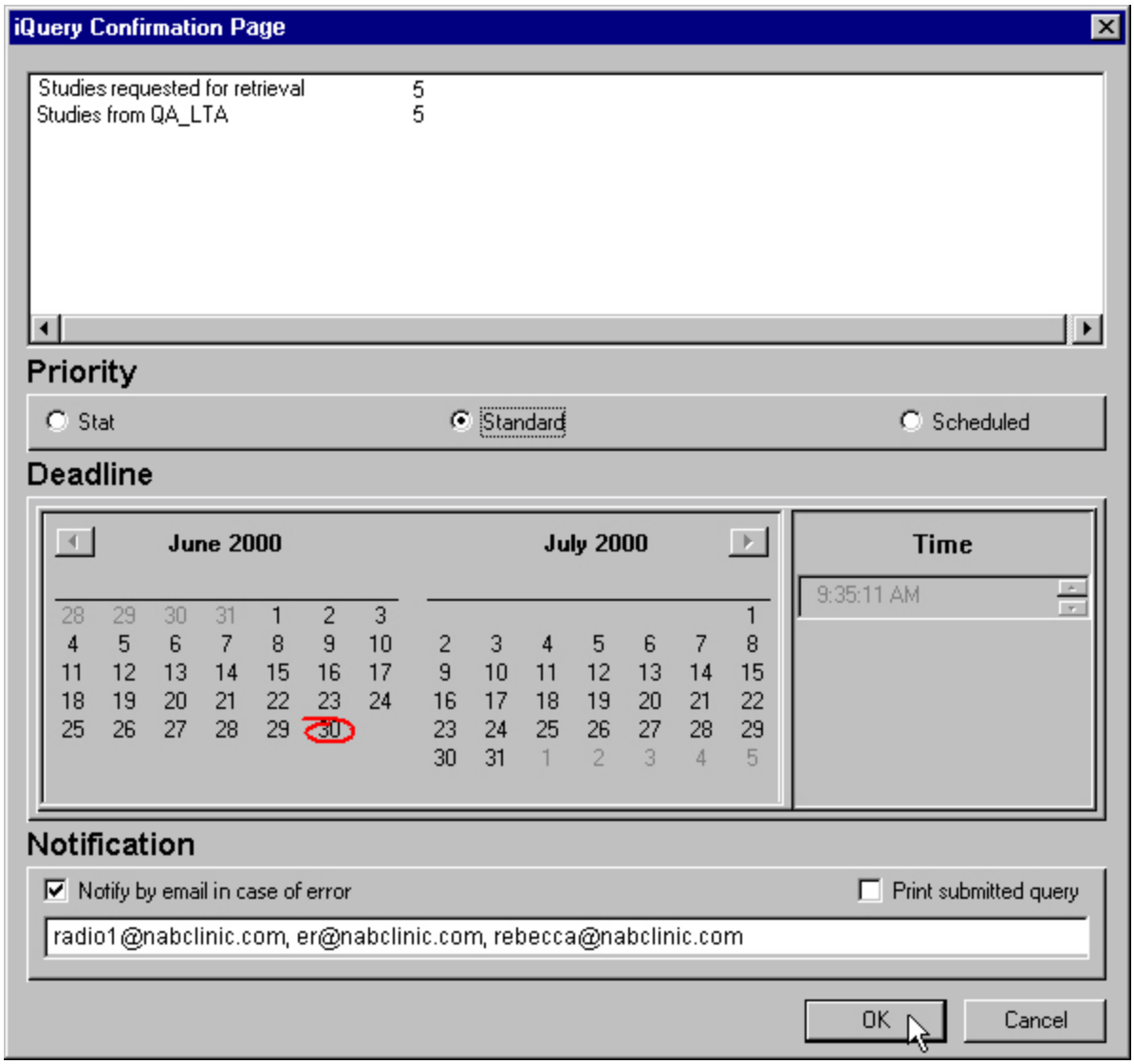
As with the iSite Patient List, the list of available studies can be sorted by Patient Name or Patient ID by clicking the gray column headings above the search fields. View the studies available for a patient by clicking the plus symbol at left. Select the studies you wish to retrieve by checking the boxes to the left of the studies. If you wish to select all of a patient's studies simultaneously, you can double-click on that patient's name. Please note that this function is only available on an internal-network connection.

The number of patients listed and studies selected will be displayed in the dialog box at lower left.


iSite Radiology
Clear All
Patient Name
MRN
Archive
Study Date
Enter
10.2.0.234
KILARNEY, CHRISTOPHER 175228612 11/02/1999 14:...
CR; FEMUR 2 VWS LT; Acc: 4318... 11/02/1999 14:..
CR; HIP MIN 2V LT; Acc: 4318080;... 11/02/1999 14:..
CR; LUMBAR SP 2 VW; Acc: 4318... 11/02/1999 14:..
CR; CERVICAL SP 2VW; Acc: 430... 10/29/1998 11:..
CR; SHOULDER M3V L; Acc: 4309... 10/29/1998 11:..
CT; N-C W&ABD W/WO; Acc: 420... 09/22/1998 17:..
CR; LUMBAR SP 2 VW; Acc: 4207... 09/16/1998 14:..
CR; THORACIC 2 VIEW; Acc: 420... 09/16/1996 14:..
CR; CHEST 2 VIEWS; Acc: 42076... 09/16/1996 14:..
MR; LSPINE W/C; Acc: 4089996; ... 07/30/1996 17:..
CR; BONE SURVEY; Acc: 404671... 07/08/1996 12:..
CT; NECK WO; Acc: 3427461; Ref... 06/22/1995 07:..
1 Patients Listed
5 Studies Selected
STOP QUERY
SUBMIT LIST
VIEW QUEUE

Submitting the Retrieval List

To submit the list of studies that you have selected for retrieval, click the "Submit List" button in the lower right-hand corner. The following Confirmation Page will appear.



Confirming the Retrieval Request

The number of studies your have selected and the archives in which they are stored will be displayed in the top dialog box of the iQuery Confirmation Page.

Select a priority for the request you are submitting in the Priority dialog.

- The "Stat" setting will request that the archive send the studies immediately and with high priority.
- The "Standard" setting will have the studies available as soon as possible and with normal priority. This is the default setting.
- Selecting the "Scheduled" priority activates the Deadline dialog and allows you to set the date and time that you need the studies by.

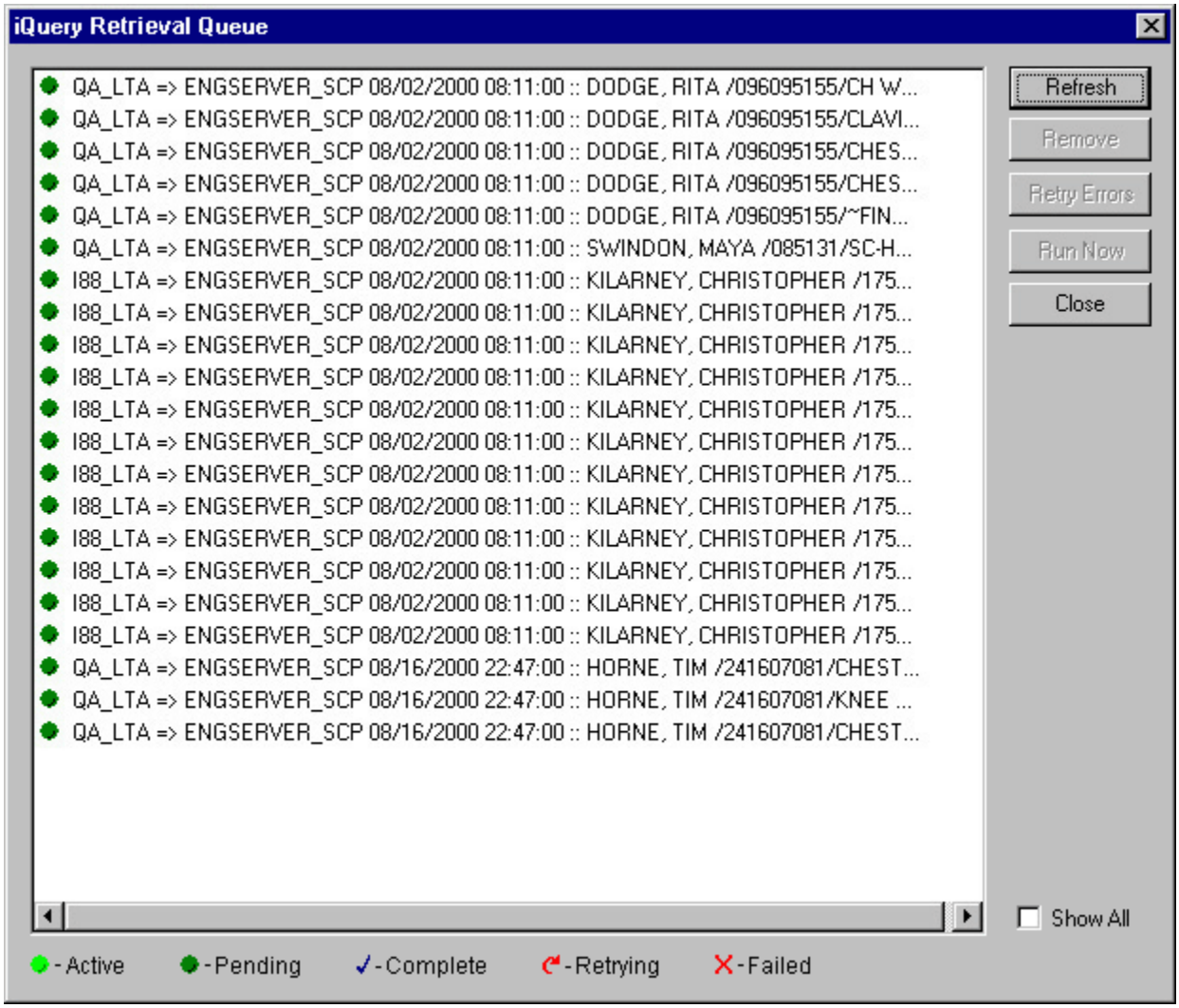
If you wish to be notified if an error occurs while your request is being processed, click the "notify by email in case of error" check box and type the email address(es) to which you want notification sent in the dialog box below.

To print a copy of the request list for your records, select the "Print submitted query" checkbox. When the request is complete, a copy of the request will print to your default printer.

Click "OK" when you have finished and the request will be processed. After clicking "OK", you will be returned to the iQuery main screen. To return to iSite, click the Patient Directory Tab.

Viewing the Retrieval Queue

If you wish to view the studies awaiting retrieval, click the "View Queue" button. The following dialog will appear. Displayed in the main dialog box are studies that have recently been requested or are in the process of being retrieved.



The symbol at the left of each study indicates the status of the request. A bright green symbol indicates that the study is being retrieved. A dark green symbol indicates that the study is pending. A blue check indicates that the study has been retrieved. A red

"X" signifies that the retrieval has failed. A red arrow indicates that the system is retrying the retrieval.

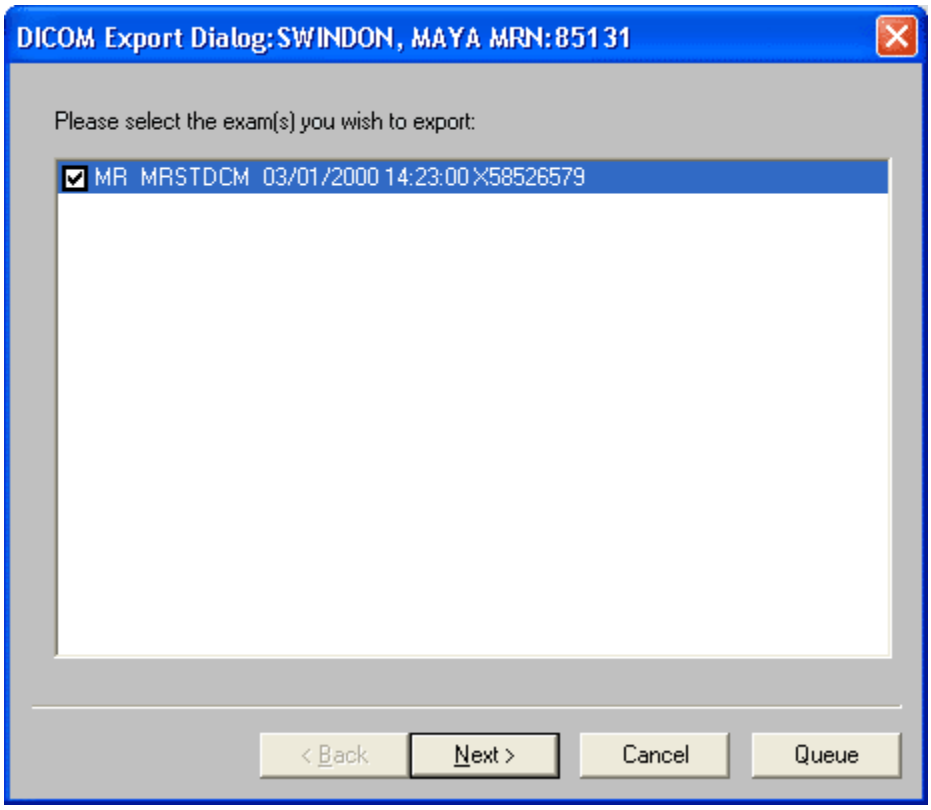
The Retrieval Queue provides you with a number of ways to alter the retrieval process. Please note that these functions are only available to users with Administrative privileges. To have a study retrieved immediately, highlight that study with your mouse and click the "Run Now" button. If you would like to remove a study from the queue, highlight that study and click the "Remove" button. To retry the studies which iQuery failed to retrieve, click the "Retry Errors" button.

To see the progress of the Queue, click the "Refresh" button.

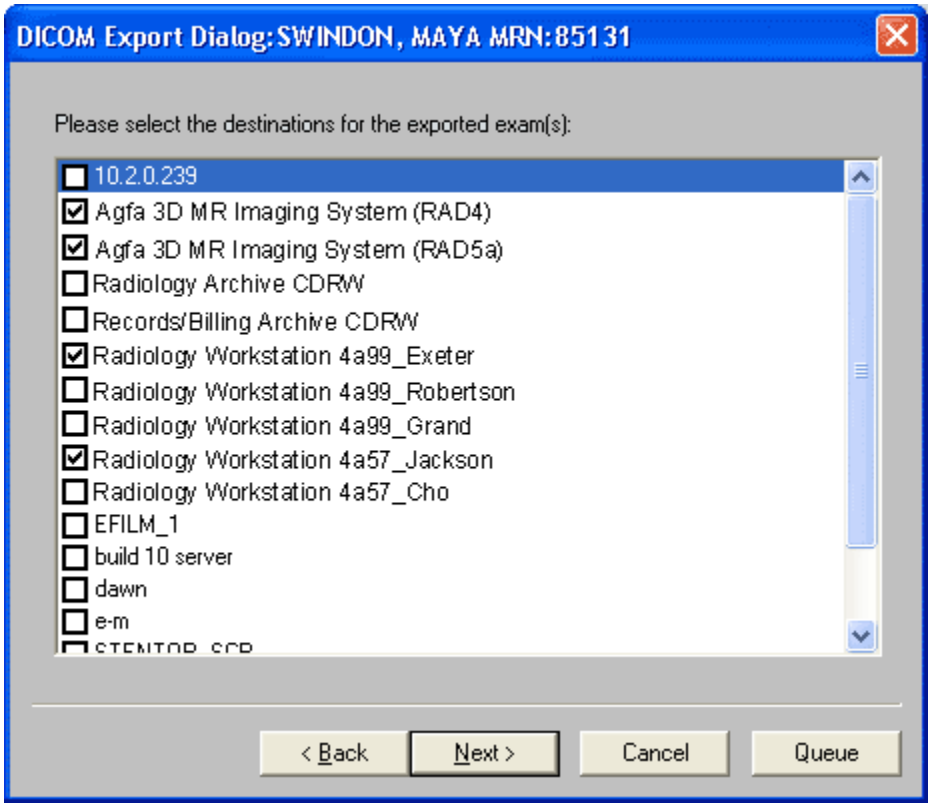
iExport: iSite DICOM Export Tool

iExport is a tool that allows users with administrative privileges to monitor the exportation of DICOM exams and the export queue. iExport works in conjunction with the "Export Via DICOM" and "Send Via DICOM" features which allow users to export iSite exams as DICOM to another DICOM device, such as a DICOM printer, a 3D imaging tool or a DICOM archive.

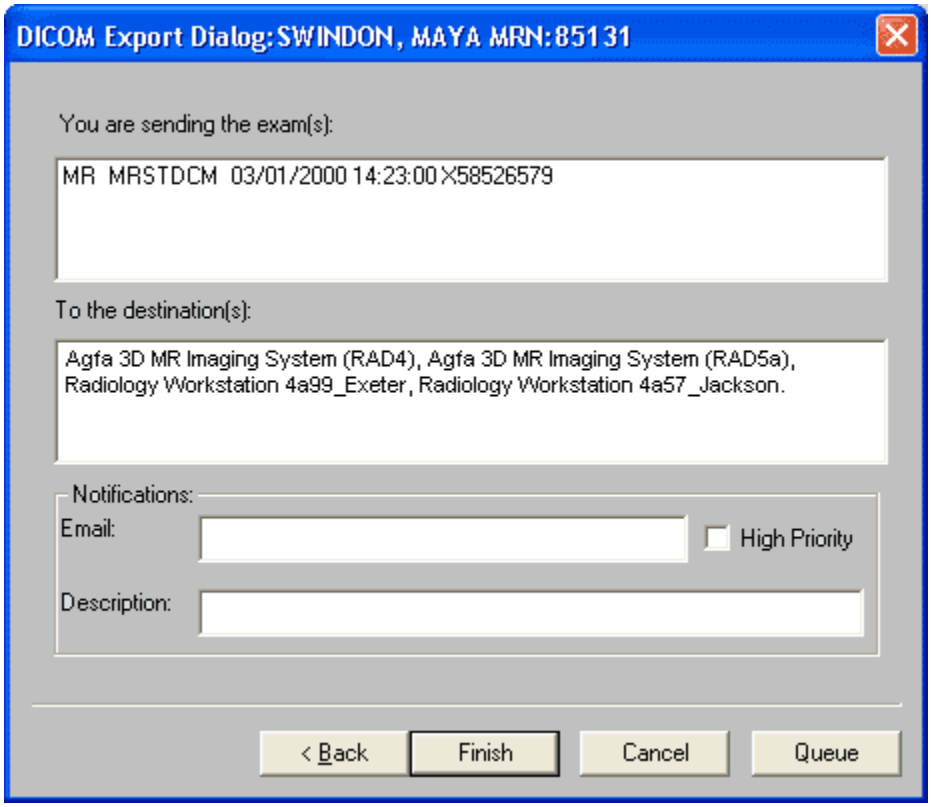
To export an exam via DICOM, right-click an exam listing from any worklist or the Patient Timelines and select the "Export via DICOM" option. The following dialog will appear:


DICOM Export Dialog: SWINDON, MAYA MRN: 85131
Please select the exam(s) you wish to export:
MR MRSTDCM 03/01/2000 14:23:00 X58526579
< Back
Next >
Cancel
Queue

Check the exam(s) that you wish to export and then click the "Next >" button. The following screen will be displayed:



Select the DICOM devices that to which you wish to export the exam. The DICOM devices listed are compiled from an iSite Dictionary set up by your iSite System Administrator. If you don't see a device that you believe should be available, please contact your iSite System Administrator. When you have selected the devices, click the "Next >" button. The following screen will be displayed:

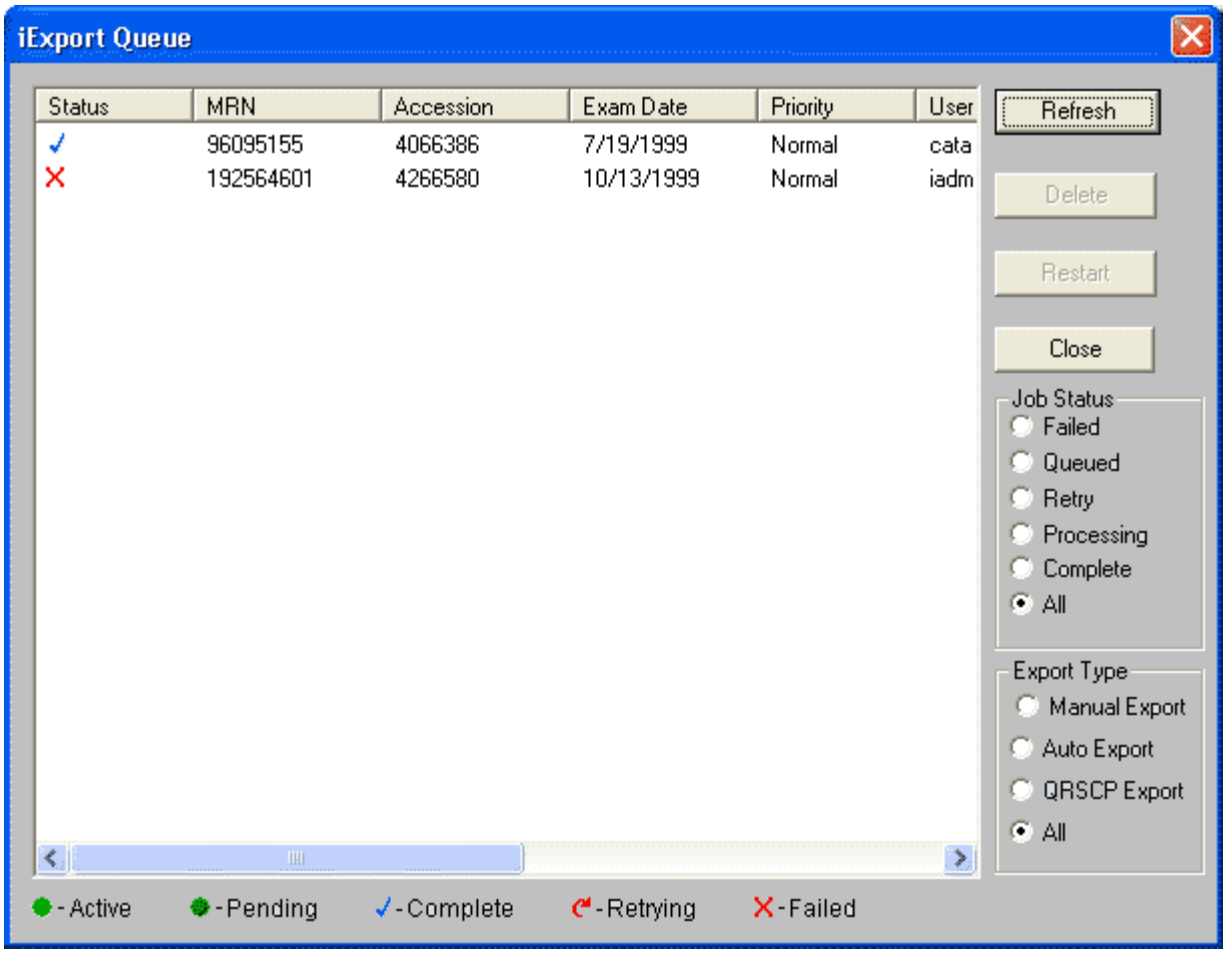


This dialog provides a summary of the export. If you wish to send out an email notification when the export is complete, enter the address or comma-separated addresses to the "Email" field with a description of the export in the "Description" field. If the notification is of high priority, check the corresponding box. When you are finished, click the "Finish" button to begin the export.

At any time, you can view the iExport Queue to view the status of all exams being exported in the system.

To access the iExport Queue, click the "Queue" button from the DICOM Export Dialog, as seen above or click the "Q" button in the iSite Control Strip, as seen below. Please note, only users with administrative permissions will see the "Q" button.

When you click the "Q" button, the DICOM queue will be displayed, as seen below. Please note that this queue can also be seen by clicking the "Queue" button in the Send/Export Via DICOM dialogs.


iExport Queue
Status
MRN
Accession
Exam Date
Priority
User
96095155
4066386
7/19/1999
Normal
cata
192564601
4266580
10/13/1999
Normal
iadm
Refresh
Delete
Restart
Close
Job Status
Failed
Queued
Retry
Processing
Complete
All
Export Type
Manual Export
Auto Export
QRSCP Export
All
-Active
-Pending
-Complete
-Retrying
-Failed

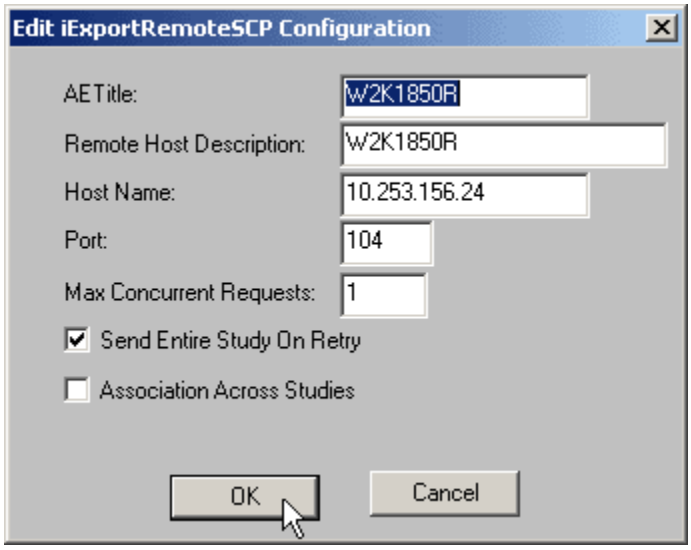
The iExport Queue is an interactive dialog. Results are filtered by the Job Status and Export Type criteria in the bottom right-hand of the dialog. You can sort queued exams by clicking the desired column header. You can also remove an exam from the list by highlighting it and clicking the "Delete" button. The status icons display the current status of the exam's export. If you would like to refresh the list, click the "Refresh" button. To restart an exam export that has failed, highlight that listing and click the "Restart" button. When you are finished, click the "Close" button to exit.

iExport is also controlled via the System Preferences section of the Preferences dialog. In this area you can add, edit and remove existing DICOM destinations. To view the iExport preferences, click the "iExport" listing from the list at left, as shown below. Please note that you must have administrative privileges to access this portion of the iSite Radiology Preferences.

To add a new DICOM forwarding address, click the "Add" button. The following window will appear.

Fill in all necessary fields and click "OK" when done. The new listing will appear in the list alongside the pre-existing ones. To edit a listing, highlight that listing and click the "Properties" button as shown below.

Edit the properties as needed, as shown in the window below, and click "OK" when finished.



If you wish to delete a listing, highlight that listing and click the "Delete" button. Click the "Apply" button to make your changes permanent.

Frequently Asked Questions and How To's

General Questions

Will iSite Radiology be able to handle all of the modalities that I use?
iSite Radiology currently handles the following modalities: Computed Radiography (CR), Computed Tomography (CT), Magnetic Resonance (MR), Digital X-ray (DX), X-Ray Angiography (XA), grayscale secondary capture (SC - including 8-bit grayscale), Nuclear Medicine (NM), Ultrasound Multiframe including grayscale (US), Positron Emission Tomography (PET), X-Ray RF (XRF), Radiotheraphy Image (RT Image) and Digital Mammography X-Ray Image. We are looking to expand iSite's support of other modalities and will post information regarding these accommodations in the Upcoming Features section of the Philips Global PACS Customer Care pages.

Do my iSite Radiology Monitors need to be calibrated?
Yes! iSite Radiology depends on the Navigational Console (where Worklists are displayed) and the Diagnostic Monitors (where diagnostic radiological images are displayed) being calibrated. If the monitors are not properly calibrated, they may not display the radiological images correctly and, as a result, patient pathology may be missed and patient care compromised. Philips states emphatically that if the monitors used in conjunction with iSite Radiology are not properly configured, the product is not being used as intended and may not function properly.

Performance Issues

What is the best type of mouse to use with iSite Radiology?
iSite Radiology is designed to be used with a three-button, wheel mouse. Foremost among these are the Microsoft Intellimouse and the Logitech Wheelmouse. While there are other three-button mice, we cannot assure that iSite will function optimally with them. iSite Radiology should not be used with a two-button mouse.

Why are images blurred when I jump from a lower resolution to a higher one?
Depending on the speed of your institution's network, images may be momentarily blurred when you jump from a lower resolution to a higher one. With high-quality hardware in place and a high-speed network, there should be no blurring at all. If blurring occurs, it should last no more than a few seconds. This blurring is called "intermediate draw" and is the result of iSite Radiology processing the digital information of the higher-resolution image.

Can I still use iSite with a two-button mouse?
No. iSite Radiology should only be used with a three-button mouse.

How fast should images and series load?

The speed at which iSite Radiology can load images and series is heavily dependant on the speed of your institution's network and the quality of your workstation. Assuming that your institution's network uses standard 10/100 BaseT ethernet, images should load nearly instantaneously.

How many patients and exams can I view at once?

The number of patients and exams that can be viewed simultaneously with iSite Radiology depends on your local system resources. You should be aware that if you load a very large number of patients or exams, the speed of iSite Radiology may be adversely affected. This is an especially important consideration when teleradiology is involved. Several safeguards have been built in to iSite Radiology to prevent teleradiology users from overloading their remote connection.

Does iSite Radiology support color and/or ultrasound?

Yes, iSite Radiology supports color in all modalities currently supported (MR, CT, CR, DX, XA, US, SC, etc.).

Using iSite Radiology

What causes an exam to be listed as an exception?

There are three conditions that cause an exam to be listed as an exception, all of which occur when a technologist enters any of the following at the modality:

- An MRN (medical record number) that does not exist in iSite.
- An ACC (accession number) that does not exist in iSite.
- An invalid MRN and ACC pair.

Can iSite exams be used by other DICOM devices?

Yes, by using the Send/Export via DICOM option. This option is available by right-clicking an exam-listing in a worklist or in the iSite Radiology Navigation Timelines. These functions allow you to send an iSite Radiology exam to a DICOM printer, 3D modeling device or DICOM archive. Using the iExport tool, your iSite System Administrator can monitor these exports.

How To's

Logging In

How do I change my username or password?

To change your username or password, speak to your iSite System Administrator, who controls all user account information.

Ad Hoc Patient Searches

How do I perform an ad hoc patient-query?

From the Patient Directory, enter pertinent information into the Sort and Search Fields and click the "Query" button. View extended search fields by clicking the " + " symbol next to the "Query" button. Available options are Patient Name, Patient ID, Exam Date, Patient Location, Accession Number, Modality and Referring Physician.

How do I reveal and view patient exams from the Patients Directory?

From the Patient Directory, click the " + " symbol next to a patient listing to reveal the exams present for that patient. To view a single exam, simply double-click that exam-listing. To view multiple exams, single-click each exam and then click the View Exams Tab.

Filter Worklists

How do I access Filter Worklists?

You can access Filter Worklists by clicking either the Personal Filters or System Filters folders in the iSite Radiology Folder List.

How do I know what parameters are shaping a Filter Worklist? How can I change these parameters?

The basic parameters for a Filter Worklists are usually displayed in the Filter's name. Some examples are "CT all", "CT Head", "MR Brain", "US Today" or "Last 10 days". To view the detailed parameters of a filter or to edit, delete or create new filters, click the Preferences Button (P) and then the Filter heading in the tree view control at left.

How do I know the status of an exam in a Filter Worklist? How do I know if a report is already present?

You can view the status of an exam by looking at the Status column in any worklist. When a report is present the report icon ( ) will be displayed next to the exam-listing.

How do I access exam images?

There are two ways to view an exam from the a Filter Worklist. To view a single exam, double-click that exam-listing. To view multiple exams, single-click on the desired exams and then select the "View Exams Tab". You can select up to 10 exams for review. Both the options listed above will take you to the Canvas Page.

iSite Radiology Canvas Page

How do I change the layout of the Canvas Page?

To change the Canvas Page layout from horizontally displayed exam rows to vertically displayed exam rows, or vice versa, right-click the "Exam Summary Window" and select either "Vertical Rack" or "Horizontal Rack" from the pop-up menu.

How do I use the Relevant Exams and Patient History Timelines?

The Timelines provide a very powerful level of functionality, giving contextual information about the exams and allowing you to load and unload, export and view the reports of prior exams. To load or unload an exam from the timeline, simply double-click the listing. To access other options, right-click the exam-listings.

How do I arrange patient images?

Individual images or series can be arranged within an exam rack by clicking the image header or footer and dragging it to the desired location. Exam row order is chronological and cannot be modified.

How do I enlarge an image from the exam rack?

Individual images and series can be enlarged to an expanded pop-up window by double-clicking anywhere on the image. This expanded pop-up window can then be enlarged by placing your cursor on the window's periphery, clicking and dragging.

How do I quickly adjust the window width and window level of an image?

The window width and window level values of images can be easily changed on the fly in iSite Radiology. To make adjustments, simply click and hold down the left mouse button while simultaneously dragging your mouse. To adjust window width drag the mouse laterally; to adjust window level, drag vertically. You can create preset window width and level settings, such as Bone, Brain, Liver, Mediastinum and others, for any modality in the preferences section. These can be applied to any image or series by right-clicking the series.

How do I zoom into an image?

This depends on the type of image that you are viewing. You can zoom into plain-film images by scrolling the wheel button back and forth. You can zoom into series images by left-clicking and dragging while simultaneously holding down the "Alt"-key.

How do I pan across an image?

This depends on the type of image that you are viewing. You can pan across plain-film images by holding down the wheel button and dragging the mouse in the direction you wish to pan. You can pan series images by left-clicking and dragging while simultaneously holding down the Shift key.

How do I cine through image series such as MRs and CTs?

You can cine through MR and CT series by rolling the wheel-button back and forth. Alternately, you can use the up and down arrow keys to cine through slices.

How do I fast cine through image series such as MRs and CTs?

You can fast cine through MR and CT series by holding down the wheel-button and moving your mouse back and forth. Alternately you can use the up and down arrow keys.

How do I link series or images for simultaneous interrogation?

First, double-click both the series or images you wish to link, so that they are in expanded pop-up windows. Resize the windows if needed, so that they both fit on the screen. Right-click one of the images and select the "New link" option. Then, right-click the second image and select the "Join link" option. The two images or series will be linked.

How do I perform advanced manipulation of images, such as invert, flip, rotate, annotation and measurement?

To access the advanced image manipulation features of iSite, just right-click on the image that you wish to manipulate and select the desired option from the pop-up menu. Advanced image manipulation takes place in expanded windows or in the Diagnostic Monitors.

How do I change the size of the Navigational Rectangles?

To change the size of the Navigational Rectangles on an exam-by-exam basis, right-click the corresponding monitor icons in the iSite Radiology Control Strip and select the desired configuration. To change the size of the Navigational Rectangle on a modality-by-modality basis, click the "Preferences Button" in the iSite Radiology Control Strip, select the Hanging Protocol option from the tree control view at left and then add or edit a hanging protocol as necessary.

How do I view a presentation state? How do I create a presentation state?

You can view presentation states (if available) of an exam by right-clicking the Exam Summary Window and selecting the Presentation States option from the pop-up menu. If you are a technologist or an intern, or if you wish to create a personal presentation state, right-click the Exam Summary Window and select the "Save Presentation State" option from the Presentation States section of the pop-up menu. If you are a radiologist, a radiologist's presentation state will be created when you mark an exam "read" by clicking the "Mark Read" button in the Exam Summary Window.

How do I mark an exam "Read"?

If an exam has not yet been read, the "Mark Read" button will be displayed in the Exam Summary Window. To mark that exam "Read", click the "Mark Read" button.

How do I move to the next unread exam in MyWorklist?

Click the "Next Exam" button in the Patient Exam Tab.

Diagnostic Monitors

How do I view images and series in my Diagnostic Monitors?

As soon as you enter the canvas page, images and/or series from your primary exam will be displayed in the Diagnostic Monitors. There are two ways to view additional images and series. You can drag images and series into the Navigational Rectangles or you can drag the Rectangles onto the desired images or series..

How do I use the interactive scaled rules?

To use the scaled rules, left-click and drag them to the desired location. When you release the mouse-button, the rule will snap back to its original place.

How do I perform advanced manipulation of images, such as invert, flip, rotate, annotation and measurement?

To access the advanced image manipulation features of iSite Radiology, just right-click on the image that you wish to manipulate and select the desired option from the pop-up menu.

How do I reconfigure my Diagnostic Monitors?

There are two ways to reconfigure your Diagnostic Monitors. To change the monitor configuration on an exam-by-exam basis, right-click the corresponding monitor icons in the iSite Radiology Control Strip and select the desired configuration. To change the monitor configuration on a modality-by-modality basis, click the "Preferences Button" in the iSite Radiology Control Strip, select the Hanging Protocol option from the tree control view at left and then add or edit a hanging protocol as necessary.

How do I remove an image or series from my Diagnostic Monitors?

If you would like to remove an image or series from your Diagnostic Monitors, simply drag that image or series out of the Navigational Rectangles in the iSite Radiology Canvas Page.

iExport

How do I export an exam to a DICOM device?

There are four ways to export an exam. From the Patients Directory or a Filter Worklist, right-click an exam-listing and select the "Send via DICOM" option from the pop-up menu. From the Canvas Page, right-click on an exam-listing in the timelines or right-click the Exam Summary Window of an exam rack and select the "Export via DICOM" option from the pop-up menu.

How do I view the progress of the exam exportation?

To view the iExport Queue, click the "Q" button in the iSite Radiology Control Strip.

Troubleshooting iSite Radiology

iSite Radiology is designed to be as problem-free and self-healing as possible. Still, there are certain instances in which you will not receive the result you expected, either because of user error, a network problem or a problem with iSite Radiology itself. Fortunately, on many of these occasions there are simple workarounds that you can perform to achieve the expected result. This troubleshooting section of the iSite Radiology User Manual is organized by areas of the program where you might experience trouble. Of course, if there is a problem that you cannot work around or remedy on your own, do not hesitate to contact either your iSite System Administrator or Philips Global PACS Customer Care by calling (877) 328-2808 or emailing isitecare@philips.com.

Image Viewing

Very few image-viewing problems have been identified with iSite Radiology. Most of these issues are related to the mouse. Please make sure that you are using a mouse that Philips has identified as appropriate for this program.

Series Will Not Cine

If you find that series do not cine when using your mouse's wheel-button, try the up and down arrow keys. If this does not work, check to make sure that the series you are trying to cine has been stacked. In the Exam Rack, look in the lower right-hand corner of the series you are trying to cine. A description will read "# of images." Of course, if this reads "1", then you will not be able to cine. Furthermore, some modalities may not be stacked by default. This decision is made on a institution-wide basis. For more information, please contact your iSite System Administrator.

Zoom and Pan Not Possible

If you find that it is impossible to zoom into an image, it may be that the image is already at its highest resolution. MRs for example, have only two different resolutions that can be displayed, unlike CRs which have four. Also, if your mouse is not among those recommended by Philips for use with iSite Radiology, the zoom and pan functions maybe inaccessible via the mouse. To zoom into an image without using a mouse, hold down the "Alt"-key while left-clicking and dragging your mouse vertically. To pan without using a mouse, hold down the "Control"-key while left-clicking and dragging your mouse.

Glossary of Terms

Access Groups: Access Group is a term that describes permissions within the iSite security setup. Users who belong to an Access Group have access to the areas of iSite for which that Group has authorization.

Annotation: Annotations are shapes and text that you can add to an image. These indicators are saved with the image but can also be removed at the click of a button. Annotation styles include line, arrow, triangle, circle, text and freehand. Annotation styles can also be customized and reused. The styles are all editable on the fly by right-clicking on the annotation. Annotations can be removed by highlighting and clicking the "delete" button or by dragging the annotation off the screen.

Canvas Page: This area of iSite Radiology consists of the Clinical Information Window, the Relevant Exams and Patient History Timelines, and the Diagnostic Racks.

Cine and Fast Cine: These two modes describe the rate at which slices of series are viewed. Cine indicates a slow but steady and sequential viewing of a series of slices while Fast Cine indicates an accelerated, sequential viewing.

Clinical Exam Notes: If a report is available, this area of the program can be accessed by right-clicking an exam-listing in the worklists or in the Interactive Navigation Timelines and choosing the "Show Report" option. The Clinical Exam Notes displays both the Diagnostic Report as well as links to other relevant Diagnostic Reports for the patient in question.

Clinical Information Window: This portion of the Canvas Page, located directly below the iSite Radiology Control Strip, provides basic information about the patient whose exam is being displayed.

Close All Button: In the upper left-hand corner of the Sort and Search Fields of the Patients Query Page, the "Close All" button closes all open patient listings when clicked.

Diagnostic Exam Racks: The exam racks are where diagnostic exams, containing images and/or series, are displayed. The exam racks are fitted with interactive navigational rectangles which correspond to your diagnostic monitors.

Diagnostic Monitors: These large monitors are designed for the diagnostic reading of radiological images. iSite Radiology provides all navigational and exam-selection features on the Navigational Console such that the Diagnostic Monitors are kept completely free for exam review.

Diagnostic Monitor Icons: These interactive monitor icons are located in the upper right-hand corner of the iSite Radiology Control Strip. The icons correspond to your diagnostic monitors and by right-clicking the icons, you can quickly configure the layout of your diagnostic monitors.

Exam Summary Window: This portion of the Diagnostic Exam Racks, located to the left of the Thumbnail Images, displays critical information about the exam in question including modality type, date and time of the exam, accession number, referring physician name, the exam's status and the Study UID (Unique Identifier) information. The Exam Summary Window also contains the Impressions portion of the Diagnostic Report if it is available.

Exceptions: Exceptions denote exams that, due to missing or incorrect information (such as MRN or accession numbers), cannot be reconciled for processing in the Modality Worklist. These exams must be resolved by providing the missing or correct information using the Exceptions Handler or the Modality Worklist.

Filter Worklists: These are the exam-based lists produced by iSite System Filters or Personal Filters. Filter Worklists are named after the filter that produces them. For example, if you have a Filter named "CT ALL" which filters through the available exams for all CTs, the resulting worklist would be called "CT ALL" and would only display exams matching the filter criteria.

Flip: This function, available by right-clicking an image or series and selecting the "Flip/Rotate/Sort" option, allows you to flip the image or series horizontally or vertically.

Freehand Region of Interest: This measurement tool is available through the right-click pop-up menu. The complex region of interest tool is a freehand tool which allows you to trace shapes as you please.

Hanging Protocol: Hanging protocols are a feature of iSite Radiology which allow you to configure and customize how certain types of images will be hung (displayed) in the Canvas Page. For example, if you would like Head CTs to be ordered in ascending order, 3 to a row, with a split-monitor, etc. you can configure iSite Radiology to always display Head CTs that way.

Help Button: The iSite Help Button, displayed as a question mark, is a component of the iSite Control Strip. When clicked, the Help Button will activate the iSite Radiology User Manual in a separate window.

iExport: This tool allows you to export exams via DICOM to another DICOM device, such as a DICOM printer or a 3D-DICOM Imaging Device. The export process can be monitored by viewing the iExport Queue, accessed through the iExport Queue button in the iSite Radiology Control Strip.

iExport Queue: The iExport Queue provides a real-time display of the status of exams that have been exported using the iExport feature. In the iExport Queue you can also delete and restart exported exams.

iExport Queue Button: This button, located in the iSite Radiology Control Strip, provides access to the iExport Queue.

iSite Folder List: The iSite Folder List, located on the left of the iSite screen, is your gateway to various areas and tools in iSite Radiology. This directory tree functions in the same way as those found in programs such as Windows Explorer and Microsoft Outlook. Folders contain tools (such as the CD Manager), directories (such as the Patient Directory), preset search filters, other folders and clinical exams.

iSite Folder Tab: This tab displays the name of the iSite Folder tool currently being displayed. For example, if the CT ALL Filter Worklist is being displayed, the iSite Folder Tab will display "CT ALL". You can click the iSite Folder Tab to quickly return to a worklist or other tool from the Canvas Page.

iSite Radiology Control Strip: This is the portion of the iSite Radiology screen that stays constant throughout your operations in iSite Radiology. It is composed of the iSite Folders Tab, the View Exams Tab, the iExport Queue Button, the Help Button, the Preferences Button, the Diagnostic Monitor Icons and the Logout Button.

iSite Shortcuts Bar: The iSite Shortcuts Bar is a customizable way for you to access your most frequently used folders, filters and tools. The Shortcuts Bar is located on the left-hand side of the screen. The only time the shortcut bar will not be seen is when you are viewing the iSite Canvas Page. You cannot remove the Shortcuts Bar, or hide it, but you can resize it by placing your cursor on the right divider and dragging.

Key Image: A "Key Image" is one that has been selected and marked as an important image in a particular series or exam. Images can be marked key images by highlighting the selected image and pressing the space bar. The words "Key Image" will be displayed in that image to indicate its status.

Logout Button: This arrow button, located in the upper-right extreme of the iSite Radiology Control Strip, will log you out of the system and return you to the iSite Radiology Login Screen when clicked.

Monitor Layout: The monitor layout is the way in which the diagnostic monitor is split. There are nine options as well as "split horizontally" and "split vertically". The Monitor Layout options allow you to hang your diagnostic monitors exactly as you wish. These options can be accessed through the right-click pop-up menu or by right-clicking the diagnostic monitor icons.

Multi-Image Mode: This option, available from the right-click pop-up menu, allows you to split a series window into several panes. The available options are 1:1, 1:2, 2:1, 2:2, 1:3, 3:3, 3:4 and 4:5. Please note, this option is not available for thumbnail images in the Diagnostic Exam Racks.

Navigational Console: The console is a monitor located directly adjacent to your diagnostic monitors. The Navigational Console displays the iSite Shortcuts, iSite Folder List, Patient Directory and Filter Worklists, and the Canvas Page, leaving the diagnostic monitors' free for diagnostic image viewing.

Navigational Rectangles: These interactive rectangles are displayed in the diagnostic exam racks and correspond to the diagnostic monitors. The content of the diagnostic monitors can be changed by moving the rectangles within the diagnostic racks. The rectangles' size can also be changed automatically by configuring and editing your hanging protocols for each modality and body part.

Navigational Timelines: These interactive timelines include the Relevant Exams Timeline and the Patient History Timeline. These timelines are located above the diagnostic racks, below the iSite Radiology Control Strip, and provide a view of a patient's related exams and complete exam history. Exams listed in the timeline can be loaded or unloaded by double-clicking, and reports can be viewed by right-clicking the listing. Other options, such as DICOM export, are also available by right-clicking an exam listing.

Patient Directory: The Patient Directory contains an index of the patient-exams that are available for viewing. The Directory provides information about the patients, including the patients' name, ID number, the location where the exams were captured and the date of the patient's last exam. The Patient Directory is designed to provide ad hoc query capability and can be accessed by clicking the Patients Worklist Tab in the iSite Radiology Control Strip.

Preferences Button: This button, located in the iSite Radiology Control Strip, provides you access to your personal and machine preferences. If you have logged in as an iSite System Administrator, the button will provide you with general user, system-wide and machine preferences options.

Presentation State: The presentation state of an exam is a personalized configuration, often created by an intern, radiologist or technician, which can be displayed by right-clicking the Exam Summary Window and selecting that state from the pop-up menu. Presentation states created by technologists, interns or a radiologist become the default presentation state when the exam is loaded. You can create your own presentation states by right-clicking on the Exam Summary Window of an exam and selecting the "Presentation States" option. A presentation state is automatically created every time you annotate or measure an image, or whenever you click the "Mark Read" button.

Query Button: This button, located on the left side of the Sort and Search Fields, will run a query of the entered criteria when clicked.

Rotate: This function, available by right-clicking an image or series and selecting the "Flip/Rotate/Sort" option, allows you to rotate the image or series 90 degrees clockwise or counter-clockwise.

Series Selecting: This option, available from the right-click image pop-up menu, allows you to quickly switch from different series in an exam. Please note that this option is

only available in the Diagnostic Exam Racks or in your Diagnostic Monitors, not from an Expanded Window.

Sort: This option, available by right-clicking a series and selecting the "Flip/Rotate/Sort" option, allows you to sort series in ascending or descending order according to either Table Position or Image Number.

Sort and Search Fields: These fields, located in the Patient Directory, allow you to sort and search the Patient Directory. This can be accomplished either by clicking on the column headings, thereby sorting the entries, or by entering the desired criteria in the search fields and clicking the "Query" button, narrowing the Patient Directory.

Spine Labeling Tool: This option, available from the right-click image pop-up menu, allows you to apply spine labels to images and series, and then to save these specialized annotations in a Presentation State.

Thumbnail Images: Located in the Diagnostic Exam Racks of the Canvas Page, these small format images are not meant for diagnostic reading but rather, for navigational purposes. The Thumbnails can be enlarged in an Expanded Window by double-clicking. Thumbnails can be loaded into your Diagnostic Monitors by dragging them into the Navigation Rectangles or by dragging the Navigation Rectangles over them.

View Exam Tab: This tab appears in the lower-right corner of the iSite Radiology Control Strip after a patient exam has been selected from the Patient Directory or the Filter Worklists. You can view a patient's exams or easily switch between patients by right-clicking the View Exam Tab. You can quickly switch between open patients by right-clicking the Tab and selecting the desired patient from the resulting list.